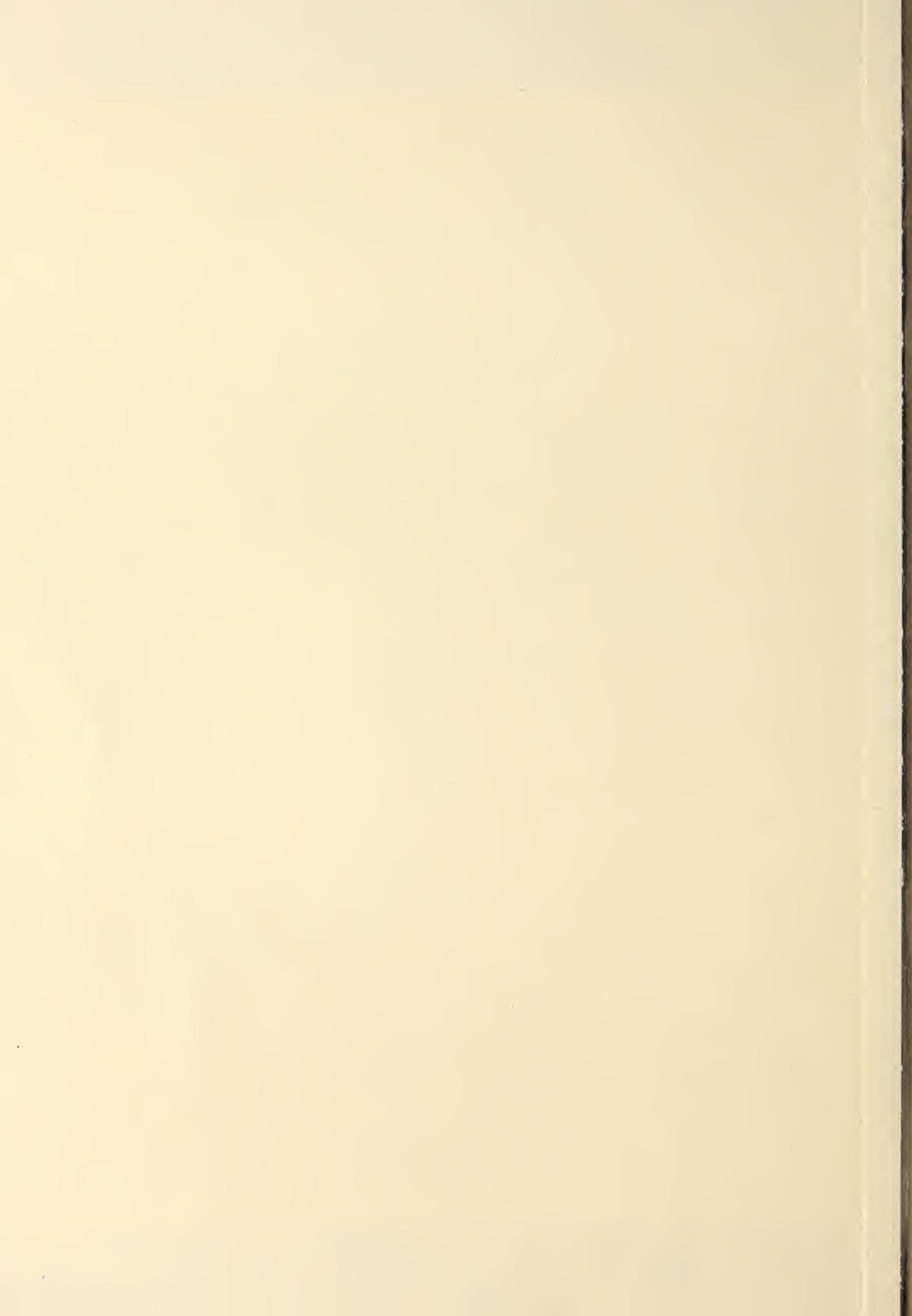


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EXCELSIOR
MARCH 1872
C. L. COE, PUBLISHER.

HARDY FRUITS & ORNAMENTALS

The COE, CONVERSE
& EDWARDS CO.
FORT ATKINSON · WISCONSIN

Of Interest to the Purchaser

The first question we who live west of the Great Lakes and north of a line running west from Chicago ask when a new fruit or ornamental is introduced is "Is it hardy?" Right here is where we can be of service to you as we have been growing fruits and ornamentals in this locality for forty years and have been trying out the new varieties as they were introduced and believe we have the cream of the list. Not everything we describe is adapted to the more northern sections but enough are so that one living in those sections can have an abundance of fruit and a good line of ornamentals.

Another thing of interest to you is that the soil on which we grow our nursery stock is a sandy loam with a clay subsoil kept in a good state of fertility with clover and barnyard manure. This, with good cultivation, makes ideal conditions to grow strong healthy fibrous-rooted trees and plants.

OUR METHOD OF GROWING AND HANDLING STOCK.

GROWING. All of our shade and ornamental trees, shrubs, evergreens, etc., are transplanted one or more times. The advantage of this is that the tree or plant has a better root system and is not nearly as liable to die when planted as those that have not been transplanted.

DIGGING. As far as possible, all of our stock is dug with large power diggers insuring a much better root than can be obtained by hand digging.

As soon as the stock is taken out of the ground, it is immediately taken to our large packing cellar (140x156) where it is graded and packed out of the wind and sun.

THE SIZE OF OUR NURSERY. We are using 120 acres of land of which 80 acres is planted to nursery stock. We are in the best position to take care of your wants whether they are large or small.

FREEDOM FROM DISEASE. Our nursery is inspected yearly by an authorized state inspector and a certificate showing freedom from injurious insect pests or disease is attached to each shipment.

GUARANTEE AND SALES CONDITIONS.

Every care possible is exercised by us to keep our varieties true to name. If through error on our part anything should prove otherwise, we hold ourselves in readiness to replace same, but it is mutually agreed between the purchaser and ourselves that we are not at any time to be liable for a greater amount than was paid for the stock.

We also guarantee that all stock sent out shall be in good condition at time of shipment.

SHIPPING SEASON. Our season in the spring begins March 20th to April 1st and continues until May 15th and in the fall about October 1st until ground freezes.

CLAIMS for shortage or damaged stock must be made within ten days of receipt of same.

TERMS cash unless by special arrangements.

Table Showing Number of Trees or Plants Required to Set an Acre

The following table shows the number of trees or plants required to fill an acre of ground when planted at the given distances apart:

30 x 30	49	30 x 20 .....	.....	72
25 x 25	70	25 x 20 .....	.....	87
20 x 20	109	20 x 15 .....	.....	135
10 x 10	435	8 x 8 .....	.....	680
8 x 6	907	7 x 3 .....	.....	2,074
5 x 3	2,904	5 x 4 .....	.....	2,178
4 x 2	5,445	4 x 3½ .....	.....	7,260
3½ x 2	6,222			

If this table does not give the distances you desire to plant, divide 43,560, the number of square feet in an acre, by the number of square feet each tree or plant will occupy.



A Fine Effect Obtained by an Open Lawn, With Shrubbery and Trees in the Background.

Planting, Pruning and Care

All land intended for the planting of fruits and trees should be well drained, as there are very few varieties that will thrive in wet, soggy soil. If the soil is not naturally fertile, it should be enriched so that it would produce a good crop of corn or potatoes. We prefer stable manure as a fertilizer.

Pruning. When a tree or plant is dug, it is impossible to get all the roots and for this reason, the top should be cut back to correspond. At least one-half of the last season's growth should be taken off, and if the top of a tree is very heavy, remove part of the side branches entirely. By doing this, the root system is not overtaxed and a much better growth is the result. All broken or bruised roots should be cut off smoothly to the sound wood.

Planting. It is very important in setting a tree or plant that the hole is dug large enough to take in the roots without crowding, and that nothing but good mellow top soil is put on the roots and thoroughly worked in among them and pressed down solid, making the tree or plant firm in the ground. All manure and mulch should be put on the top of the ground after the planting is done.

Watering at Time of Planting. If the ground is very dry at time of planting, when the hole is two-thirds filled with dirt, pour in from one to two

pails of water, according to size of hole. After this has soaked away, fill and make all firm, leaving an inch of the top soil loose.

Cultivation. Where it is possible to do so, it is best to keep the ground thoroughly cultivated between fruit trees until about August 1st in this latitude, and small fruits throughout the growing season. Where cultivation cannot be given, a mulch of manure or leaves is a good thing.

Spraying. It is being demonstrated more clearly each season that if we are to grow good fruit that will top the market, we must spray. Full directions are given on another page in this catalog. As to what kind of a sprayer to use, this depends entirely on how much and what you have to spray. There are a number of good sprayers made, and if desired, we can give prices and descriptions of the different kinds.

Fall or Spring Planting. As to which is the best time, with us it is simply a matter of soil, location and stock to be planted. If the soil is heavy clay, low and wet, we would say to fall planting, emphatically no. If the soil is well drained and stock planted is properly mulched and cared for, such as Maples, Lindens, Elms, Poplars, and Hardy Shrubbery, Peonies, Phlox, Currants, Grapes, Red Raspberries and Blackberries may be safely planted in the fall. Other stock is better planted in the spring in this climate.

Landscape Work

We can give you complete service in this department. By this we mean we will advise as to design, make you a plan of your place, furnish you the stock to plant, and superintend the planting if desired. Very few firms in the Northwest can do this.

All of this planting does not have to be done in one season, but by working to a definite plan,

when the planting is completed, all will harmonize and give the desired effect.

The men employed in this department have had not only the training given in our best schools, but also the practical experience of years of actual work planning and planting real places. This is no experiment with us, as we know what we are using and what it will do for you.



Apple Orchard.

Tree Fruits

In this latitude, plant in the spring. Cut off the bruised end of the roots, making a slanting cut on the under side. Cut back the top to correspond with the roots. Trees should be planted 2 to 3 inches deeper than they stood in the nursery. When planting out young trees, set them in a new place, where it is possible to do so. When they must be planted in an orchard where an old tree has died out, dig a large hole, fill it with fresh dirt and give the young tree a chance. Supply what is lacking in the soil with a good mulch of barnyard manure and wood ashes. It is best to cultivate young trees for several years after planting. Where this cannot be done, they should be well mulched so that no grass can grow within 8 to 10 feet of the tree. Where the ground is very rich and trees do not begin to bear as soon as they ought, it is a good plan to seed down to clover for two or three years. This will check the growth and have a tendency to produce fruit buds. Do not, however, let the orchard stay seeded down unless the grass around the trees as far out as the limbs extend is kept down by mulch. As a winter protection all trees should have a mulch of straw or manure in the fall. This prevents evaporation and root killing. When trimming to produce wood, winter is the best time. To produce fruit, June.

The body of a young tree should be protected as soon as planted, by either a veneer, lath or straw protector. We are very much in favor of straw, as every farmer has it, it is easily put on, and there is no danger of galling the tree. Take a handful of straw (rye if handy, as it is longer), set it up around the tree, tie at top, center and bottom, and your tree is safe from sun scald, mice, and rabbits. Where lath is used, care should be taken so that the trees will not be galled by the tops of the lath.

Apples

The first fruit, both in importance and general culture, is the Apple. Its period, unlike that of other fruits, extends nearly or quite through the year. By planting judicious selections of summer, fall, and winter sorts, a constant succession can be had of this indispensable fruit for family use.

In the past three or four years there has been a great revival in commercial orchard planting. This has not been overdone, and is not likely to be.

Wisconsin has been proven beyond a question to have quite an extensive area that is especially adapted to the growing of this fruit in a commercial way, the necessary requirements for suc-



Dudley Apples.

cess being good, well-drained soil, a proper selection of varieties for that locality, and the care after planting, which means cultivation, spraying, and pruning.

One of the most common errors made by those planting for market is the use of too many varieties. If ten or twenty men in one section are growing apples and have a few good kinds, they are in a position to form an association, ship in car lots, and in that way obtain best prices.

Summer Apples

Duchess of Oldenburg. A large, beautiful Apple, roundish, streaked red and yellow. Tender, juicy, and pleasant. Tree a vigorous, fine grower and abundant bearer; very hardy. September.

Golden Sweet. Large, yellow; very fair; fine, sweet. Tree a fine grower and productive. August.

Red Astrachan. The old-time favorite. Perhaps one of the most popular early apples ever grown. Large, roundish, nearly covered with deep crimson, overspread with thick bloom. Juicy, rich acid, beautiful; a good bearer. Highly esteemed on account of its fine appearance, earliness, and hardiness. August.

Liveland (Russian). Medium to large apple; clear waxen white, striped, shaded and marbled with light crimson, flesh white, very tender, pleasant, sub-acid, almost sweet. Fine. As early as Yellow Transparent. August.

Tetofsky. Striped red and yellow; medium size; tree slow, stocky grower, very hardy. One of the



McIntosh Apple.



Wealthy Apples.

earliest apples to ripen in the Northern States. July and August.

Yellow Transparent. Of Russian origin and now largely planted, and succeeds everywhere. Very early and productive, of medium size, pale yellow, good quality. Tree bears very young. July and August.

Fall and Early Winter Apples

Dudley. This is a seedling of the Duchess of Oldenburg, and is apparently as hardy and productive as that variety, but its season is about two months later. A very valuable variety.

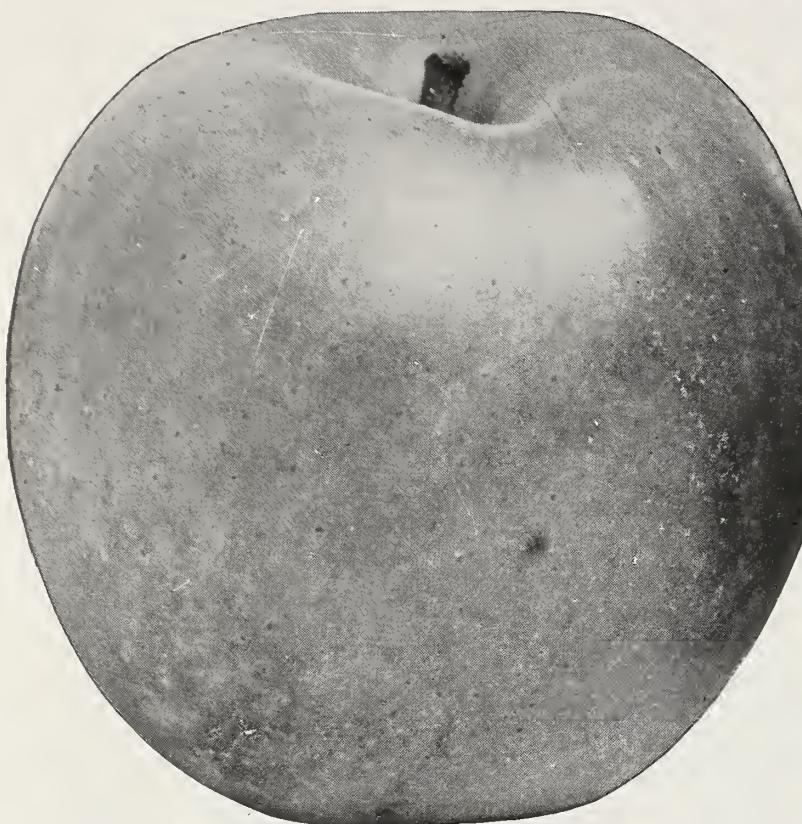
Fameuse, or Snow. Medium size, roundish, very handsome crimson; flesh snowy white, tender, juicy, highly flavored and delicious. Tree vigorous, productive, and hardy. October to January.

Longfield. A Russian variety and one of the best. Tree a strong grower and an early, abundant and annual bearer. Flesh white, fine, tender, and juicy, with a rich, sprightly, subacid flavor. November to February. Valuable for cold climates.

McMahon. Large, round; almost white, with faint blush; a very beautiful Apple; flesh white, tender, tart, not very firm. A good looking fruit. Tree vigorous and hardy as crab; bears young and abundantly. October to February.

McIntosh. Medium size, dark red, good quality, juicy, subacid. Tree a vigorous grower and hardy. November to February.

Patten's Greening. Originated and introduced from northern Iowa, by Mr. Charles Patten. It is a large green Apple of good quality. The tree is very vigorous, hardy, and productive and will "get there" with a crop of fruit if any kind can. October to January.



Northwestern Greening Apple.

Wealthy. Originated in Minnesota. Fruit large, roundish; skin smooth, mostly covered with dark red; flesh white, juicy, good. Tree very hardy, vigorous, and productive. Very profitable to plant. September to January.

Wolf River. Originated in Wisconsin. One of the largest Apples grown. Skin greenish yellow shaded with crimson; flesh rather coarse, white, juicy, pleasant, sub-acid flavor. Tree a strong grower, hardy, and productive. September to December.

Winter Apples

Ben Davis. Tree vigorous and productive; not so hardy as we would desire. Fruit large, handsome, not of first quality.

Delicious. This much-talked-of and advertised apple is doing well in some sections of this state. It, however, needs further trial before unqualified endorsement can be given. We advise planting in a small way only as yet. The tree is a good grower, and fruit is very showy and of good quality.

Golden Russet. Medium size, dull russet, with a tinge of red on sunny side; flesh greenish, crisp, juicy. Tree a fair grower, with light colored speckled shoots, by which it is easily known; bears well. November to April.

Grimes Golden. Fair size, yellow, of highest quality. Tree a vigorous grower and productive. We do not advise general planting except in very favorable locations west and north of Chicago. A splendid market variety where hardy. January to April.

Jonathan. Medium size, red; extra quality; tender, juicy, and rich. Tree a slender grower; very productive. One of the best for table or market, but like Grimes Golden, should not be planted in the extreme North. November to March.

Northwestern Greening. Originated in Northern Wisconsin. Size large; shape nearly round, very regular; surface smooth, often green, but yellow when fully ripe; flesh yellow, rather coarse, juicy, subacid; quality good. January to May.

Paradise Winter Sweet. Medium to large, yellow, excellent quality. Tree good grower, hardy and heavy bearer. December to March.

Pewaukee. Raised from seed of Duchess of Oldenburg. Large; bright yellow striped and splashed with dark red; flesh white, tender, juicy, subacid. Tree vigorous, hardy, productive. January to March.

Scott's Winter. We believe this to be a good tree for Wisconsin planters. The tree is extremely hardy and healthy and the apple is of fair size, good color (being red-striped), good quality and a splendid keeper, and keeps fresh and crisp. February to May.

Tolman's Sweet. Medium size, pale whitish yellow, slightly tinged with red; flesh firm, rich, and very sweet. Tree a fine grower, hardy, and productive. November to April.

Forest Winter. This is a variety that has been grown in this state for some time in a local way. It is worthy of wider dissemination. The fruit is of good size, greenish yellow, nearly covered with red; is of excellent quality and a good keeper. Tree is hardy.

Crab Apples

Within the past few years a good many people have given much attention to improving this class of fruit. Their efforts have been attended with marked success. Crab apples succeed equally well in all sections and are valuable for cider, preserving and jellies, and some of the improved sorts are excellent for eating.

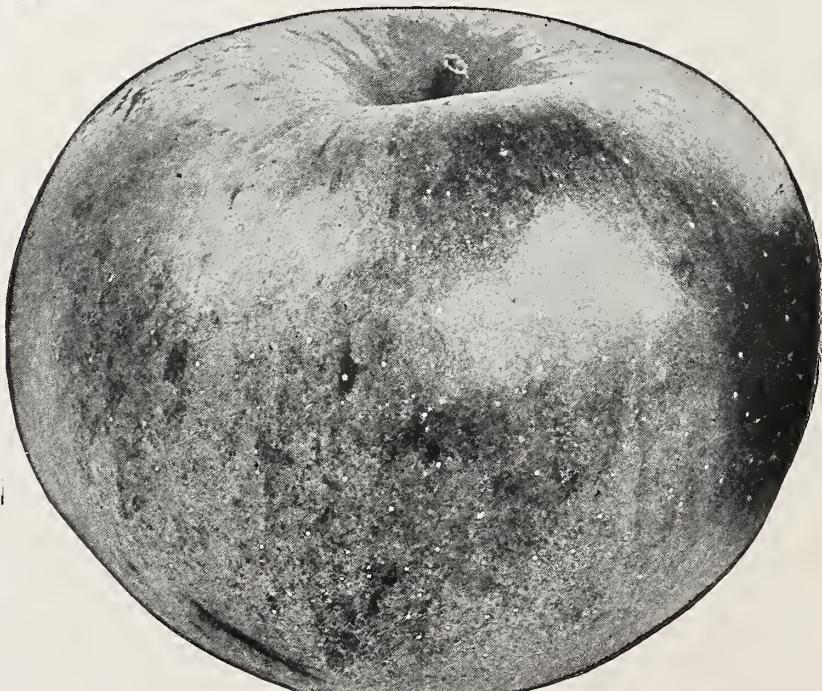
Florence. Fruit medium sized, uniform in shape. Color yellowish white, overspread with bright pinkish red. Flesh tender, juicy, brisk, sub-acid, good. Tree moderately vigorous grower, bears young and is productive. A good variety to use in place of Transcendent.

Hyslop. A hardy, good-keeping variety. Fruit produced in clusters. Good for cooking and other purposes. Dark red, heavy bloom.

Sweet Russet. Large, round, and conical; green russet, with a faint blush. Very rich, sweet; one of the best for eating and cooking. August and September.

Transcendent. We do not encourage the planting of this variety owing to the tree being a bad blighter. Can furnish the trees if wanted.

Whitney No. 20. Large, averaging 1½ to 2 inches in diameter. Skin smooth, glossy, green, striped, splashed with carmine; flesh firm, juicy, and flavor pleasant; ripens the latter part of August. Tree a great bearer and very hardy. A vigorous, handsome grower with dark green, glossy foliage.



Patten's Greening Apple.

Plums

This is a fruit that has been sadly neglected in our northern sections since the severe winters killed out the old European sorts. Out of seeming defeat, however, sometimes our greatest victories come. Necessity caused the lovers of this fruit to develop a class of Plums that are designated as natives. These were produced by making a selection of our very best native wild plums, and making crosses with the seedlings grown from them. In this way there have been obtained varieties of which trees are perfectly hardy and productive of fruit that is of fine appearance, good size and nice quality, suitable for both cooking and dessert. Our state experimental station, at Madison, deserves no small share of credit for testing and sending out information regarding this class of fruit. Plant the natives and have fruit in abundance.

Native Sorts

De Soto. Medium to large, round-oblong, purplish red when fully ripe, with moderate bloom; skin thick; flesh medium firm, good. Medium to late. This probably is more extensively grown than any other variety at present. Inclined to overbear, and fruit should be thinned to get best results.

Forest Garden. Hardy, early, a heavy bearer of juicy, sweet and rich Plums of a dull purplish red, with minute yellow specks and thin bloom. Tree a rank grower and needs some pruning at ends of branches or they grow so long as to split down with their heavy load.

Hammer. Medium to large size, globular, mottled red and yellow. Coppery red all over when fully ripe. Should be cut back in early summer to prevent over-weighting of branches. Flesh yellow with slight reddish tinge, juicy, sweet, fine; skin thinner than most American plums; peels readily. A very beautiful plum; tends to overbear; late.

Hawkeye. Large to very large, round-oblong, purplish red, skin thick, flesh good and firm. Tree vigorous and productive.

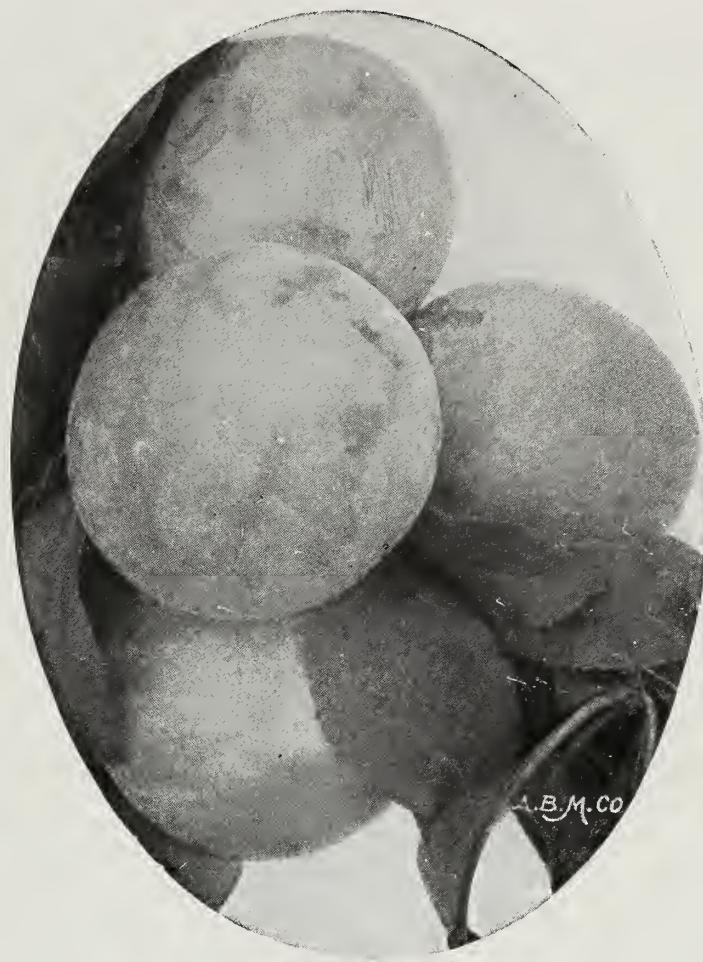
Loring. This plum originated in Rice County, Minnesota, and is a seedling of the Burbank, crossed by the De Soto or Weaver. A committee appointed by the Minnesota Horticultural Society unanimously awarded this variety the \$100 prize that had been offered for a plum that combined hardiness, productiveness, size, shape, color, flavor, smallness of pit and general good characteristics of the tree. In listing this new variety we are sure we are placing before the planters the best thing yet introduced in the plum line for the northern planter. The tree is an exceptionally strong, vigorous grower, bears young and abundantly. The fruit is very large, measuring from $1\frac{3}{4}$ to $2\frac{1}{4}$ inches in diameter, flesh is meaty and of fine quality.

Quaker. Large, round, dull purplish-red, more or less sprinkled with yellowish specks, with a slight bloom; flesh yellow, firm, sweet, and pleasant; skin rather thick; tree vigorous and productive. One of our most satisfactory plums in hardiness, productiveness, size, and quality.

Surprise. Fruit large, dark purplish red when fully ripe, covered with a heavy bloom and densely sprinkled with yellowish dots; flesh firm, tender, and of the very best quality. Tree a fine grower.

Stoddard. Large, light red over yellow; season medium.

Wolf. Freestone; large, round, yellow blotched with red; skin thick, flesh firm, meaty, and good. Tree a stout, good grower, prolific. Medium season. Valuable for home use or market.



Hawkeye Plums.

Wyant. Fruit medium to large, slightly oblong and distinctly flattened; purplish red; semi-cling; thick skin, rich, yellow flesh, sometimes red next to stone; of good quality. A sure cropper. September 1.

Hansen's Hybrid Plums

We have all read more or less of Luther Burbank's wonderful creations in horticulture. Wonderful as they are, they do not compare in value to us here in the North and Northwest to the work done by Prof. N. E. Hansen of Brookings, South Dakota, who has given us a new family of plums.

He has used the common wild plum of the Northwest, the native sand cherry of the Dakotas and the large, luscious Japanese plums as parents. By cross fertilization and growing seedlings from these crosses, he has obtained trees that are perfectly hardy, early bearers, very productive, with fruit of good size and fine quality. We certainly believe you will make no mistake in trying these plums.

Opata (Sioux Indian name for bouquet.) A cross between the Dakota sand cherry and the Japanese plum Gold. Tree is a good grower, an early and heavy bearer. Fruit is from an inch to one and one-quarter inches in diameter. Purplish red in color, with blue bloom; pit small; flesh green, of good quality, excellent for eating out of hand. Ripens last of July.

Sapa (Indian word for black). A cross between the sand cherry and the Japanese plum Sultan. Tree moderately free grower. When mature, the fruit is dark purple clear to the pit, of very good quality and hangs well on the tree after ripe. Ripens in August.

Hanska (Sioux Indian word for tall). The parents of this variety are the native wild plum and the large apricot plum of China (*Prunus Simoni*). Tree is a very strong grower. Fruit is about $1\frac{1}{2}$ inches in diameter, bright red with heavy bloom, flesh firm, yellow and of good quality.



Hansen's Hybrid Plums.

Waneta. A cross between Burbanks, Apple Plum, and Terry. It is claimed by good authorities to be the best of Prof. Hansen's productions.

The tree is hardy, bears young, is a regular and annual bearer. The fruit is larger than the largest native plum and of excellent quality.

European Sorts

These are adapted to the section along Lake Michigan and some other favorable locations.

Bavay's Green Gage. Very large, greenish color; fine flavor. September.

Bradshaw. A good market sort. Fruit large and dark red. Flesh green, juicy.

Lombard. This and Moore's Arctic seem to be the best adapted to our severe climate. The Lombard is large in size; violet-red in color, with yellow flesh; juicy, sugary, and every way good. Tree vigorous and an immense bearer.

Moore's Arctic. A hardy plum from Maine, where it has for many years borne very large crops. Medium in size, nearly round; deep purple.

Peter's Yellow Gage. Large, oval, bright yellow, rich, juicy, fine quality. A good grower. September.

Japanese Plums

In many sections these are doing very well. They come into bearing early; trees are strong growers and very productive. They are worthy of trial. Would not advise planting in latitude of central and northern Wisconsin, except along the lake shore.

Burbank. Large, nearly globular, clear cherry-red with a thin lilac bloom; flesh a deep yellow, very sweet, with a peculiar and very agreeable flavor. This tree is a straggling grower; usually begins to bear second year after transplanting. Ripens in August. The best of the Japs for our climate.

October Purple. This variety is doing well in the Sturgeon Bay country. A large, late, purple plum of good size and quality. Tree claimed to be the hardiest of the Japanese plums.



Loring Plums.



Montmorency Cherries.

Cherries

The Cherry is one of the most ornamental of our fruit trees, which, with its delicious and refreshing fruits, makes it very desirable for planting near the dwelling where beauty and shade as well as fruit is desired.

There are very few more desirable fruits than the cherry. They are being planted more and more each year in all sections of the country, and there is always a brisk demand on the market for good fruit. Aside from their fruit value they make very ornamental trees for the lawn. The fruit is delicious when eaten out of the hand or preserved. No home garden is complete without a few cherry trees.

The Morello or acid types, are thoroughly hardy, while the sweet cherries should not be planted as far north as this latitude.

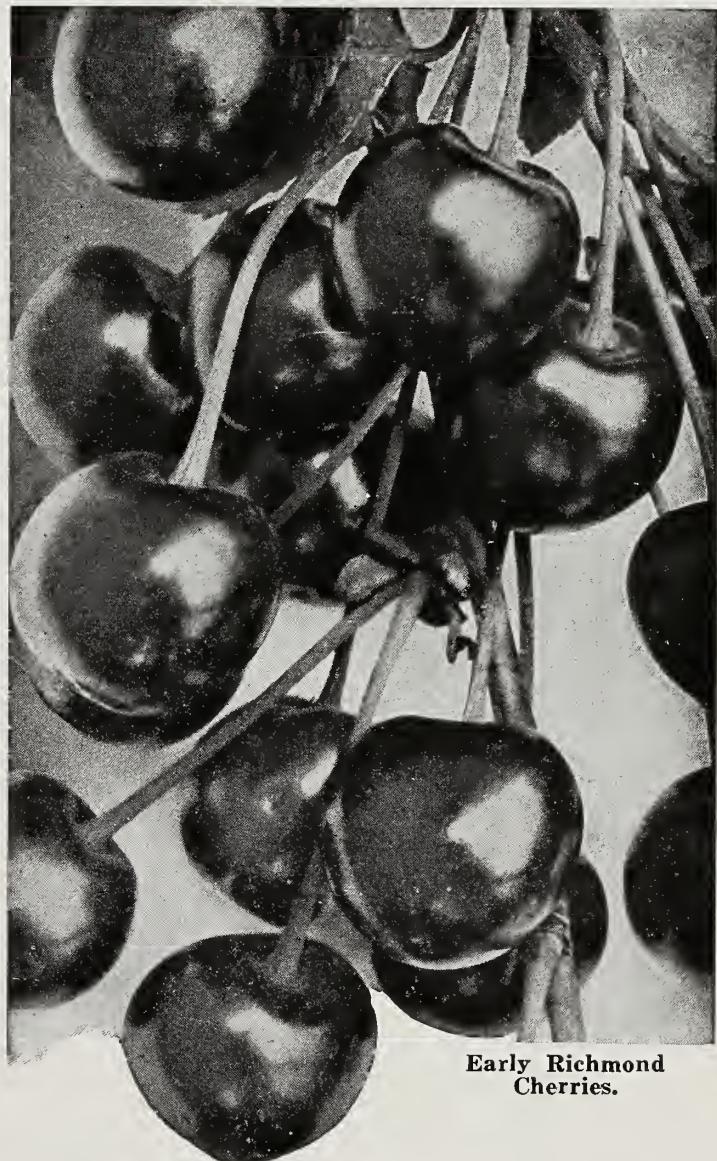
The cherry thrives best on sandy soil and there it attains its highest perfection. It will do well in almost any situation except a wet one.

Early Richmond. Medium size, dark red, melting, juicy; sprightly, rich acid flavor. The stone adheres to the stem with remarkable tenacity. This is one of the most valuable and popular of the acid Cherries, and is unsurpassed for cooking purposes. Tree a slender grower with a roundish, spreading head, and is exceedingly productive. Ripens through June. Hardiest sort in the list.

English Morello. Large, dark red, nearly black, rich, acid, juicy, and good. One of the best late varieties. Very productive. August.

Large Montmorency. A cherry of the Richmond class but larger and more solid. A more upright grower, hardy, and a heavy cropper. Ripens from seven to ten days later than the Richmond, entirely escaping danger from spring frosts. A valuable addition to our orchard fruit.

Wragg. Of the Morello type. Tree quite dwarf, very productive; one of the best canning cherries.



Early Richmond Cherries.



Vermont Beauty Pears.

Pears

We cannot recommend Pears for general cultivation in the Northwest. There are, however, many localities where they do well, and in these we say, plant Pears. They succeed best in a well-drained clay soil. The dwarf Pear works in very nicely on small places. They should be planted so that the union of the pear and quince stock will be 2 or 3 inches below the surface of the ground. They come into bearing early, and are productive. Varieties marked with D can be furnished in dwarf trees.

Anjou (Beurre de). A large, handsome Pear of good flavor, that keeps until midwinter. D.

Bartlett. Large, buttery and melting, with very rich flavor. A vigorous and erect grower; bears young and abundantly. Middle of September. D.

Flemish Beauty. Large, pale yellow, russety-brown cheek, beautiful; melting, sugary, and delicious; requires to be picked early. Tree vigorous, bears young and abundantly. One of the most hardy of all pear trees; very popular. September to October. D.

Seckel. The standard of excellence in the Pear; small, but of the highest flavor. Tree a stout, slow, erect grower. September to October.

Kieffer's Hybrid. The tree has large, dark green, glossy leaves, and is of itself very ornamental. It is an early and very prolific bearer. The fruit is of good quality when thoroughly ripe. Valuable for table and market. October to December. D.

Vermont Beauty. Tree hardy, healthy and productive. Fruit medium size, skin yellow, nearly covered with carmine; excellent quality. D.

Peaches

We cannot recommend planting Peaches in Wisconsin. However, if one wishes to plant them, we can furnish the following.

Champion. A large, early variety, creamy white, with red cheek; sweet, rich, and juicy. Productive. August.

Crawford's Early. A magnificent, large, yellow Peach of good quality. Early in September.

What the C. C. & E. Service Means to You.

The experience gained during forty years of growing Fruits, Fruit Trees, Vines, Shrubs, and Ornamentals in Wisconsin, is yours. This should mean much, as we are in a position to know what varieties are most suitable to your location.

If it is Landscape Work in which you are interested we can make the plans and furnish the goods. If the effect is not what it should be, you know whose fault it is. If your plan is made by one party and you get the goods from another, and the results are not satisfactory, who is to blame?

We cheerfully correct all errors of our own making.

Blackberries

This valuable fruit begins to ripen before raspberries are gone and continues until grapes are ripe, thus keeping up a constant supply of fruit for the table and market. Plant 8 by 3 feet. Cultivate shallow, but not later than August 1, so as to allow the canes to become thoroughly ripened before winter. Winter protection can easily be given by bending down and covering with earth or marsh hay.

Any moderately rich soil will answer for the cultivation of blackberries, and an annual dressing of manure or some commercial fertilizer will produce an excellent effect on the succeeding crop of fruit.

Blower. This is a comparatively new sort that is recommended by many fruit growers as being a very fine variety. We have not grown it here and list it only for trial.

Eldorado. Perhaps the most valuable blackberry for our northern climate. The berries are large, jet black, ripen well together and are borne in large clusters; they are sweet and delicious, have no hard core, and keep well after picking.

Snyder. This is a well-known popular variety; hardy and productive. It is quite early and is a valuable market variety.

Lucretia Dewberry. A variety of the low bush or running blackberry, ripening before black raspberries are gone. Fruit large, jet-black and very showy, often measuring from 1 to 1½ inches in length. Plant four by six feet, and cut the new canes back, not allowing them to get more than four or five feet long. Very easy to cover on account of its trailing habit.

Raspberries

Black Raspberries and those that root from the tip should be planted in the spring. Red or sucker varieties can be planted either fall or spring. Plant the cap varieties 7 feet by about 3 feet, and keep thoroughly cultivated, but do not cultivate deep. Pinch off the tip of the canes when about 1 foot high the first season, and after the first year when from 2 to 2½ feet high. This makes the canes stocky, and does away with the necessity of tying up the canes. These side branches should be cut back in the spring to 15 or 18 inches in length. The old canes should be cut out as soon as through bearing, and burned.

The sucker varieties can be planted 6 feet by about 2 feet and allowed to form hedgerows, or they can be planted 4 to 5 feet and kept in hills, not allowing more than five or six canes to the hill. The latter is probably the better plan. North of latitude 43, we advise winter protection of Raspberries and Blackberries.

Cap Varieties

Conrath. We still consider this one of our best black caps. Cane a good grower and with us hardier than Kansas. Fruit large, coal-black, firm, and good quality. Season medium.

Cumberland. The largest black Raspberry known. It has been well tested and is giving the best of satisfaction. The quality is of the best, and, in spite of its great size, is very firm; ripens mid-season. Canes are very large and strong and able to carry their load of fruit.

Columbian. The strongest-growing variety on our grounds. Fruit large, dark purple and of good quality; excellent for canning. Hardy, very productive, and taken all together, one of the most desirable sorts we have.

Munger. For this latitude we consider this a more valuable variety than the Gregg. The bush is a strong, upright grower, and with us is perfectly hardy. The fruit is larger than the Gregg and ripens even later than that variety. We consider it the best late variety we have tested.



St. Regis Raspberry.

Plum Farmer. We have fruited this variety now for several years, and are well pleased with it. It ripens the entire crop in a few days, and is early enough to get the good prices. The bush, so far, has been perfectly hardy here, is a good grower and productive. The berry is of good size, and of a quality that makes it a good market berry.

Older. One of the largest varieties and holds its size to the end of the season. Bush is a good grower and perfectly hardy here. One of the very best for home use, but rather soft for shipping.

Sucker Raspberries

Cuthbert (Queen of the Market). A strong grower and very productive; very large, bright red, fruit firm, of very fine quality. Season medium to very late; a good one for market or home use. It is doing well everywhere. Needs winter protection.

Golden Queen. May be described as a yellow Cuthbert.

King. This is claimed by many to be the best early red raspberry yet introduced. Cane is a strong grower and hardy. Berry is large, good color, firm, bright red, and a good market sort. Our experience with this sort bears out these claims.

Marlboro. Fruit of very large size, of a bright scarlet color, excellent flavor; firm; a good shipper. Canes very large and strong; foliage dark green, perfectly hardy, exceedingly productive, and commences to ripen early. A profitable market variety.

Miller's Red. This comparatively new variety is very early; canes very hardy, medium size and wonderfully productive of large, bright red berries that hold their size to the end of the season. Very firm, and hence valuable for distant markets.

St. Regis (Red). We have fruited this variety several seasons, and like it. The cane is perfectly hardy here, is a strong, healthy grower, and produces a heavy crop in July. In September and October the tops of the new canes throw out blossom stems and produce a nice lot of fruit. This gives it the name of Fall or Everbearing Raspberry. The fruit is of good size, bright red, firm, and of good quality. The best of the ever-bearers we have tried.



Elderado Blackberries.

A.B.M.CO



King

The best and most profitable red raspberry we have.

Cumberland

Called by some "The Business Black Cap" and well named as it delivers the goods.

Columbian

The great pie and canning berry.

We have many other good varieties but we consider these three our best.

Strawberries



Senator Dunlap
Strawberries.

Our plants are all dug from new beds set for this purpose. The entire row is taken up, all old plants and weak new ones discarded, so the customer gets the best there is.

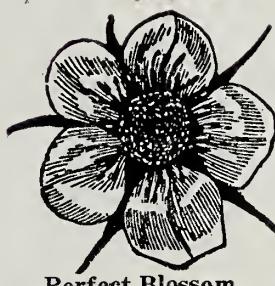
We use every precaution to keep varieties pure. All our plants are freshly dug at time of shipment and are carefully handled and packed so as to reach the customer in the best possible manner. We never use cold storage strawberry plants. In the latitude of northern Illinois and Wisconsin, spring is the best season to plant strawberries.

They will succeed on any good garden soil. Set the plants 18 to 24 inches apart in the row, rows $3\frac{1}{2}$ to 4 feet apart. Train the runners lengthwise of the row, allow the new sets to root 5 or 6 inches apart; they ought not to be closer than that. As soon as the ground freezes cover with hay or straw enough to just hide the plants. In the spring remove enough of the mulch so that the plants can come up readily, leaving balance to retain moisture and keep fruit clean. Our soil is especially well adapted to the growing of strong, healthy plants.

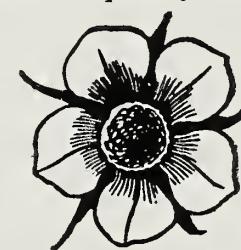
Those marked (Per.) are perfect in blossom, and will bear alone or fertilize those marked (Imp.), which will not bear alone, but must have some of the perfect-blossom sorts planted with them. We usually plant one-third or one-half perfect.

Aroma. (Per.) Plant shows no weakness of any kind. Fruit very large, roundish conical, rarely misshapen, glossy red, of excellent quality and produced in abundance. One of the most profitable late varieties that we grow. It produces twice as much as Gandy, and fine berries.

Beder Wood. (Per.) This is a very desirable early berry for either home use or near market. It is in every way healthy and vigorous, and an enormous yielder. Good variety to plant with Warfield, Haverland or Bubach. The berry is of large size, roundish, of regular form, bright scarlet and of good quality. It continues in bearing a long time. One of the best.



Perfect Blossom.



Imperfect Blossom.



Strawberry Bed Showing Plants Grown in the Matted Row System.



Paul Jones Strawberries.

Bubach. (Imp.) One of the old standard sorts, that does well on a great variety of soils. Fruit very large and of uniform size, good quality, and color, and produced in great abundance. The plant is large, vigorous, healthy, and a fine grower.

Dr. Burrell. (Per.) The originator claims for this that it is better in every way than the Senator Dunlap. We find it very much like this standard sort. Possibly the plant and foliage is a little larger than the Dunlap. The fruit is quite similar in size and appearance, possibly a little lighter in color. We feel certain that it is a good variety and you will make no mistake in planting it.

Brandywine. (Per.) Plant a luxuriant grower, healthy, hardy, and productive; fruit good shape, large size, good quality, sweet and tender, firm, and, what makes it more valuable to the grower, it is late, thus bringing higher prices in the market.

Finch. (Per.) We still hold this as our best big berry. The plant is large, healthy, and vigorous. The fruit is of good quality and firm for so large a berry.

Gibson. (Per.) This variety is a favorite with many of the Michigan growers and is also being planted quite extensively by some of our Wisconsin gardeners. The plant is a strong, thrifty, healthy grower, the berry is large, dark red and of fine appearance. Season medium early to late. A variety that is worthy of a fair trial.

Gandy. (Per.) A good grower, has a perfect blossom, is fairly productive and late in commencing to ripen. The fruit is large, bright scarlet in color, of good flavor.

Haverland. (Imp.) For large, healthy plants, vigorous growth and great productiveness, this is not surpassed. The fruit is large, long, conical, with a neck, never of bad form, bright red, ripens all over, of fair quality. It succeeds everywhere and has all the good points of Crescent, with much larger size. Too soft for long shipment.

Paul Jones. (Imp.) This is a new variety that is very promising. The plant is a strong, healthy grower, sending out an abundance of runners and is productive. The fruit is long, conical in shape, bright red and of good quality.

Senator Dunlap. (Per.) We firmly believe this to be the greatest all-around berry now on the market. In the first place, the plant is perfect, not large, but tough, bright, a rampant runner, and ready to grow under any circumstances. It is wonderfully productive, and every berry is generally brought to perfection. The fruit is beautiful, bright red and glossy, as regular as if cast in a mold, never known to be misshapen and of delicious quality. Large, but not the largest, firm, a good shipper and splendid keeper, and, when canned, one of the richest varieties we ever saw. It begins to ripen early, and continues a long time in bearing. Needs plenty of room; a splendid sort to plant with Warfield.

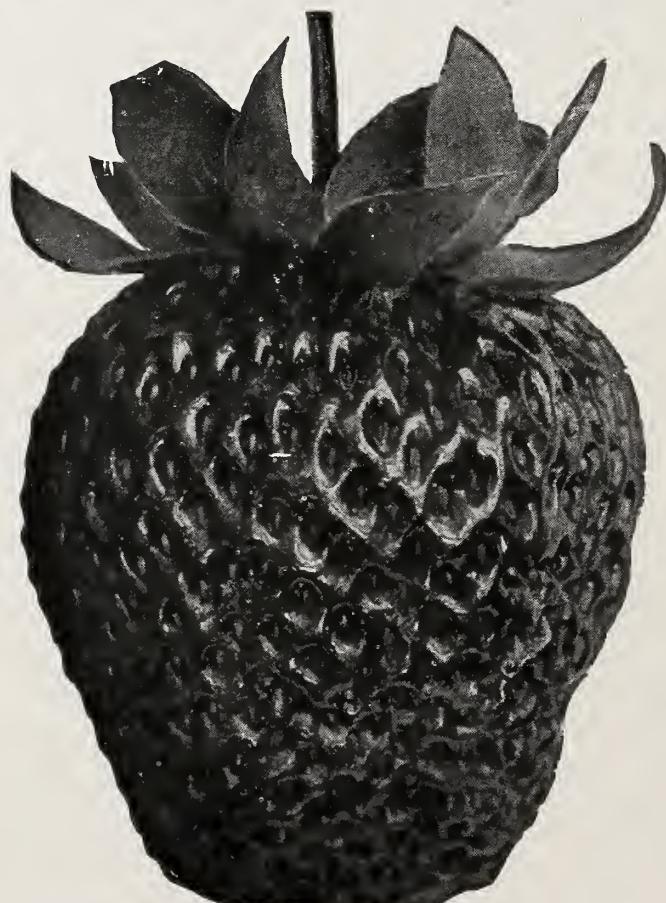
Warfield. (Imp.) One of the most popular Strawberries today. It is a very vigorous grower, foliage tall, which protects blossoms from late spring frosts. It is one of the best of shippers, and its rich color, large size, fine shape and good flavor make it an almost perfect market berry; unequaled for canning purposes, and, taken altogether, we consider it one of the most valuable varieties for the general grower that we have thoroughly tested. Dunlap is a good fertilizer for this variety. Plant rather small.

Everbearing Strawberries

We think every lover of strawberries should plant a good sized bed of the everbearers or, as we prefer to call them, Fall bearers in connection with the regular June bearing sorts. A strong point in their favor is that plants set out in April will give a good showing of fruit in September and October.

Continual bearing is a heavy drain on plants and naturally calls for extra care and feeding. Plenty of moisture is also essential to the best success. If the early blossoms are removed the later or fall crop will be heavier.

Progressive. Our experience is that this is the best all around variety for general planting. The plant is a good healthy, vigorous grower and makes a fair amount of runners. The berry is of good size, bright red, and of good quality.



Gibson Strawberry.

Gooseberries

Require the same care and soil as Currants, except that we do not recommend fall planting in the North.

Downing. This we consider the most valuable Gooseberry grown, always giving good crops of large, handsome, pale green berries of fine quality. Bush a vigorous grower, free from mildew and enormously productive.

Josselyn (Red Jacket). An American seedling that has been widely planted. Fruit is large and smooth. Bush is hardy, clean, healthy, and productive.



Downing Gooseberries.

This delicious and healthful vegetable should be found in every garden. Nothing can be more easily grown and no plant will give so much good, healthful food for so little outlay. Set in the fall or spring, with the crown of the plant about three inches below the surface of the ground. Ten to 12 inches by 2 feet is a good distance to plant. Every fall give the bed a good coat of manure, working it in between the rows in the spring. Liberal applications of salt are also beneficial.

Conover's Colossal. A standard variety. Well known as a valuable market and garden sort.

Columbian Mammoth White. A new sort, with white shoots that remain white. Very large.

Palmetto. Extensively grown for market on account of earliness, large size and fine appearance. We consider it our best.

Bonvallet's Giant. The strong points of this variety are earliness, productiveness, large size and rust-resisting powers.



Asparagus



Victoria Rhubarb.

Horse Radish

Maliner Kren. This variety was brought from Bohemia. It is much earlier, has larger roots and will produce nearly one-third more to the acre than the ordinary horse radish. The quality is of the best.

Rhubarb or Pie Plant

Plant the hills 3 or 4 feet apart, and make the ground very rich by a good mulch of manure, well worked in every fall or spring.

Victoria. Early, large, and good, either for home use or market.

Queen. The extra large, tender stalks are a decided pink color. Delicious for cooking or canning. A very strong grower.

Linnæus. Leaf-stalks large, tender, juicy and quite early.

Mammoth. A good variety, large, and tender.

A Small Investment Adds Great Value

Have you ever given careful consideration to the question of how much a few trees and shrubs would add to the value and beauty of your home?

An investment of \$15.00 to \$50.00 can be made to add from \$100.00 to \$500.00 to the selling value of a property. We can offer you plain practical suggestions as to how it can be done.

Palmetto Asparagus.

Currants

To get the best results, plant in a deep, rich soil, and give good cultivation and plenty of well-rotted manure. Keep the bush well thinned out in the center, and do not have more than four or five bearing canes at a time. The best method of renewing is, after the bush is four or five years old, to remove one of the old canes each year and leave one of the strongest new sprouts. Plant either in the fall or spring 5 to 6 feet. For the currant worm use fresh white hellebore, one ounce to two gallons of water, or dust bush with it when dew is on.

Cherry. Large; bunches short; plant strong, vigorous grower and productive.

Perfection. A variety that originated in New York, and has received many medals and prizes where it has been on exhibition at Horticultural Societies and exhibitions. It is a beautiful bright red in color. Size equal to Fay, the cluster averaging longer, with good, long stem, making it easy to pick. Equal in productiveness to any of the large sorts. The quality is rich, mild, sub-acid, with few seeds. One of the best varieties for table use. The bushes make good growth and have an abundance of large, healthy foliage.

Pomona. A fine market sort of good size, color, and quality; will hang on the bushes for some time after ripening, and market well. Bush is an open, vigorous grower and very productive.

Red Cross. A good vigorous growing bush. Berry is large, clusters of good size, and quality is A-1.

Red Dutch. An old standard sort. Berry medium size, good quality; plant a strong, upright grower; productive.

Victoria. An erect-growing, heavy-bearing variety. Cluster long, bright red, of good size, late; a valuable sort.

White Grape. The best table variety, large and luscious. A good grower and productive.

Wilder. This is proving to be one of the most profitable market sorts. The bush is a good grower; the fruit is of good color and large enough to bring the best price on the market.

Black Currants

Black Champion. Large, excellent.

Lee's Prolific. Bush a strong grower; berry good size and productive.

Grapes

The Grape-vine should be planted in good, rich, well-drained soil, 6 to 8 feet apart, and from 4 to 6 inches deep; dirt pressed firmly around the roots. Dig the hole large enough to take in the roots without crossing each other. Trimming should be done after the leaves drop. The first year allow only one cane to grow, cutting back in the fall to within three or four buds of the ground. The second season train up two canes, cutting back in the fall to 2 or 3 feet in length if the vine has made good growth. After this there are

many methods of training. We prefer tying to stakes and not allowing the vine to get over 6 feet in height.

Agawam (Rogers' No. 15). Red or maroon in color. Bunch usually loose, shouldered; berries large; skin thick; flesh pulpy, meaty, juicy, of a rich, peculiar, aromatic flavor; ripens about with Concord; a good keeper. Vine a strong, rank grower, hardy and productive. Should be pruned, leaving long canes. One of the best of Rogers' Hybrids.



White Grape Currants.

GRAPES—Continued

Beta. Is especially valuable where extreme hardiness is desired. Said to stand the winters in Dakota without protection. Fruit is of medium size and fair quality.

Brighton. (Red.) Bunch medium to large, long, compact, shouldered. Berries of medium size, thin skin, flesh tender and of best quality. Vine hardy, vigorous, and productive; ripens with Concord. Should be planted near other varieties, as it does not always fertilize when alone.

Concord. (Black.) The most popular Grape in America. Bunch and berry large and of good quality. Vine vigorous, healthy, hardy, and productive.

Clinton. Fruit of this variety is of rather poor quality. Is good for wine and preserves. The vine is a strong, vigorous grower, very hardy and is the best variety we know of for covering arbors, etc., as it does not need winter protection.

Campbell's Early. (Black; new.) Vine is a strong, vigorous grower, with thick, heavy, healthy foliage; bunch large, shouldered; berry large, nearly round, covered with a blue bloom; adheres to the stem; skin thick, does not crack, quality about same as Concord. Ripens about with Moore's Early.

Delaware. (Red.) Still holds its own as one of the finest Grapes. Bunches small, compact, shouldered; berries rather small, round, thin skin, light red, flesh very juicy without any hard pulp, with an exceedingly sweet, spicy and delicious flavor.

Lindley. (Red; Rogers' No. 9.) Ripens with Concord. Vine a vigorous, healthy grower; berries medium size, of fine quality and a good keeper; should be pruned long.

Moore's Diamond. (White.) Bunch and berry large, excellent quality. Ripens with Delaware. Vine strong, healthy grower and productive.

Moore's Early. (Black.) One of the very best early black Grapes. Clusters medium size; berry very large. Ripens nearly two weeks before the Concord, and is about the same quality. Vine hardy. Should have a place in every fruit garden.

Niagara. Strong grower; bunches very large and compact, sometimes shouldered; berries as large or larger than the Concord, mostly round, light greenish white, semi-transparent, slightly amber in the sun. Skin thick but tough and does not crack, quality good, has a flavor and aroma peculiar to itself; much liked by most people.

Salem. (Red; Rogers' No. 53.) Vine a strong, healthy, vigorous grower; bunch large and compact; berry large, round, coppery red; skin thin; flesh tender, juicy, free from hard pulp, of very good quality. Ripens with Concord.

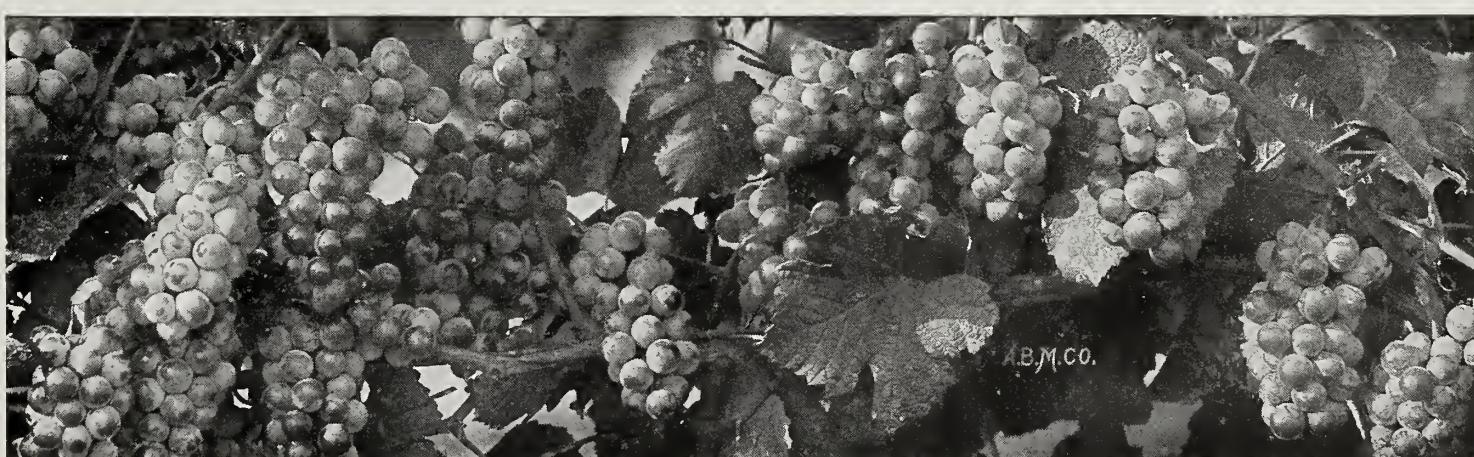


Worden Grapes.

Wilder. (Black; Rogers' No 4) Bunch and berry large, good keeper, quality excellent, season about same as Concord.

Worden. A splendid Grape of the Concord type, but earlier; larger in bunch and berry and of decidedly better quality; vine as hardy as the old stand-by and in every way as healthy.

For the benefit of our customers we publish formulas of insecticides and fungicides and have compiled data as to the proper time for spraying. See pages 47 and 48.



Concord Grapes.



Hydrangea Arborescens Grandiflora Alba.

Hardy Shrubs

The figures immediately after the name indicate about the height of Shrubs at maturity.

We are making the growing of Hardy Shrubs, etc., one of our specialties. Our soil is especially adapted to the growing of this stock.

Nothing adds more to the beauty of a place than to have the sides and background well filled with nicely arranged groups of shrubbery. Until seen, one cannot appreciate the effect that can be brought out by properly arranging and grouping the wonderful assortment of foliage ranging in color from the darkest green and purple to light orange and silver tints. Added to this, the great variety in blossoms unite to keep up a never-failing interest.

If you do not know how to arrange them, let us help you.

Shrubs and Vines that Flower in May.—Almonds, Forsythia, Honeysuckle, Japan Quince, Lilacs, *Prunus triloba*, Snowballs, Spirea, Tree Pæony, Wistaria.

In June.—Clematis, Deutzia, Dogwood, Elder, *Elæagnus longipes*, Honeysuckle, Lilacs, Herbaceous Peonies, Snowballs, Spirea, Syringa, Weigela, Wistaria, *Rosa rugosa*.

In July.—Clematis, Spirea, Honeysuckle, *Rosa rugosa*.

In August and September.—Bignonia, Clematis, Honeysuckle, *Hydrangea Paniculata grandiflora*.

Shrubs whose Flowers are succeeded by Ornamental Fruit.—Barberry, scarlet berries in September; Chinese Matrimony Vine, red berries in September; Dogwood (red-branched), white berries in September; Elder, purple fruit in August; *Elæagnus longipes*, deep orange-red berries, very showy; Highbush Cranberry, *Rosa Rugosa*.

Acacia; Moss Locust - Robinia

Rose Acacia (R. hispida). 4 to 6 feet. This medium-sized shrub is a native of the mountains of Virginia. The pinnate leaves are light green; flowers pink, the shape of pea blossoms, and borne in loose clusters.

Almond - Pyrus

Dwarf Double-flowering Almond (P. Japonica fl. pl.) 2 to 4 feet. These are small shrubs that are covered early in the season before the leaves appear with small, double, rose-like flowers. We have them in both white and pink.

Barberry

Thunberg or Japanese Barberry. 3 to 4 feet. This variety does not harbor the wheat rust. Is used largely for low hedges and in front of taller growing shrubs. Blossom small, yellow, and is followed by berries that turn bright red in autumn and hang on well into the winter. Leaves are small and change to a beautiful coppery red in the fall. A very desirable shrub.



Thunberg's Barberry Hedge.

Box Barberry. This is a dwarf variety that is being used in the East for borders and work of that sort. We are trying this out, hope it will stand our climate as it will be very useful in landscape work.

Buckthorn - *Rhamnus*

Common Buckthorn (*R. catharticus*). 8 to 10 feet. A very useful hedge plant. Foliage dense and dark green. Has attractive white flowers in June and July.

SEA BUCKTHORN, see *Hippophae*

BURNING BUSH, see *Euonymus*

Caragana

C. arborescens (Pea Tree). 8 to 10 feet. A large shrub or small tree. The flowers are pale yellow, pea-shaped, and are borne in great abundance in May. Good for massing, but should be kept somewhat in the background. Is somewhat rusty in autumn. Very hardy.

Sweet-Scented Shrub - *Calycanthus*

C. floridus. A native shrub attaining a height of from 6 to 8 feet. The flowers, springing from the axis of the leaf, are double and very fragrant, and of a chocolate-red color; foliage is quite large and glossy green. Wood also has a spicy odor.

Clethra

C. alnifolia (Sweet Pepper Bush). 5 to 10 feet. A small shrub that blossoms very freely the latter part of summer. The flowers are white, very fragrant, and borne in upright racemes. A desirable shrub.

CORALBERRY, see Snowberry

Currant - *Ribes*

Yellow-flowering Currant (*R. aureum*). 3 to 5 feet. An old variety; fragrant yellow flowers, followed by brownish fruit.

Crimson-flowering Currant (*R. sanguineum*). 3 to 4 feet. An American sort that produces an abundance of bright crimson flowers.

Dogwood - *Cornus*

Cornelian Cherry (*C. mascula*). 8 to 10 feet. A large-growing shrub. The branches are covered early in the spring with yellow flowers, and in the fall with bright red berries resembling cherries.

C. Späthii. 3 to 6 feet. A fine, rapid-growing shrub with red bark; leaves have a broad margin of creamy yellow. One of the very best variegated-leaved shrubs.

Siberian Dogwood (*C. Sibirica*). 8 to 10 feet. A hardy, free-growing shrub; bark bright red in winter.

C. sanguinea elegantissima. 4 to 6 feet. Similar to Späthii, except that the margins of the leaves are white instead of yellow.

Deutzia

D. crenata fl. pl. 6 to 8 feet. A very desirable shrub blossoming in June. The double white flowers are slightly tinged with pink. Is not perfectly hardy.

D. crenata fl. pl., var. Pride of Rochester. 6 to 8 feet. A variety produced by Ellwanger & Barry, Rochester, N. Y. Blossom large, double, white, back of petals tinged with pink. Vigorous grower. We consider it the best of the Deutzias.

Slender-branched Deutzia (*D. gracilis*). 2 to 3 feet. Of dwarf habit, very fine bloomer; succeeds well under glass.



Siberian Dogwood—*Cornus Sibirica*.

Euonymus

Strawberry or Spindle Tree

E. alatus (Cork-barked Euonymus). Of dwarf compact habit; branches four-winged; leaves small; fruit red. One of the most beautiful of shrubs in fall when foliage turns bright scarlet.

Burning Bush; Wahoo (*E. atropurpureus*). 6 to 10 feet. Tall-growing native shrub with leaves larger than the European, that turn scarlet in autumn. Its most attractive feature is the abundance of bright red berries that are carried well into the winter.

Eleagnus - Oleaster

Russian Olive (*E. angustifolia*). 15 to 25 feet. A very large shrub or small tree; the leaves are narrow and silvery white in color; blossoms are small, yellow, and very fragrant; perfectly hardy.

Silver Thorn (*E. longipes*). 4 to 6 feet. Of dwarf, spreading habit; foliage dark green above, silvery white beneath; small yellow flowers; fruit oblong, bright red, covered with small white dots, and is edible. Valuable on account of ornamental character of the fruit.

Elder - *Sambucus*

Large, rapid-growing shrub that blooms in June; flowers white. They are grown chiefly for the foliage effect; require severe pruning to keep them in shape.

Common Elder (*S. Canadensis*). 5 to 8 feet. A well-known shrub, having large, flat bunches of white flowers in June and reddish purple berries in autumn. Very showy and deserving of more extended cultivation.

Golden Elder (*S. nigra aurea*). 6 to 8 feet. A handsome, large-growing variety with golden-yellow foliage which holds its color all season. Should be planted where it can get full sunlight to be at its best.

Variegated Elder (var. *variegata*). 5 to 6 feet. The leaves are margined and mottled with white and yellow. A good grower.

Cut-leaf Elder (var. *lacinata*). 5 to 6 feet. A variety with deep-cut foliage and somewhat drooping habit. Very nice.



Hydrangea Paniculata Grandiflora.

Forsythia - Golden Bell

These are pretty shrubs of medium size. Natives of China and Japan. The flowers are drooping yellow and appear very early in spring before the leaves. Bush hardy, but flower buds kill in severe winters.

F. Intermedia. One of the hardiest and most floriferous of the Forsythias. Blooms very early, before leaves appear.

F. suspensa. Long, slender, curving branches. May well be called Weeping Forsythia.

Fringe Tree - Chionanthus

White Fringe Tree. (*C. Virginica*). 10 to 20 feet. In favorable locations this develops into tree-like proportions. The contrast between its large, deep green, thick, leathery leaves and the loose drooping bunches of white flowers resembling silken fringe is fine; blossoms May or June.

PURPLE FRINGE, see Sumac**Hydrangea**

H. arborescens grandiflora alba. This magnificent hardy American shrub is the very finest addition to this class of plants found in many a year. The blooms are of the very largest size, of pure snow-white color, and the foliage is finely finished. One of its most valuable characteristics is its coming into bloom just after the passing of all the early spring shrubs, while its long period of bloom—from early June through August—makes it doubly valuable, not only to the florist, but to every owner of a garden. Perfectly hardy. The habit of the plant is excellent. It is bound to become the most widely grown and the most useful of all the Hydrangeas, and one of the most valuable shrubs found in the American garden.

H. paniculata grandiflora (Hardy Hydrangea). 5 to 6 feet. One of the best shrubs in cultivation. Is a strong grower and produces large panicles of

white flowers in August that change to a delicate pink and then green, lasting until winter. To produce best results should be grown in rich soil with plenty of manure, and be severely pruned each season, as the bloom is produced on the ends of the new wood. Very showy and effective.

H. paniculata grandiflora, Tree Form. 6 to 8 feet. Same as the above, except that it is grown in standard or tree form.

Hippophae

H. rhamnoides (Sea Buckthorn). 6 to 8 feet. Is a graceful, willow-like shrub with soft gray foliage and slender drooping branches. Especially charming near water.

Hazel; Filbert - Corylus

Common Hazelnut (*C. Americana*). 4 to 8 feet. A native of most of the northern states. The nuts are smaller than the European filberts, but are sweet and of good quality. Shrub rather coarse, very hardy.

Bush Honeysuckle - Lonicera

The following sorts are of erect, upright growth; flowers are followed by small berries. (See Climbing Vines for other Honeysuckles.)

L. bella albida. One of the finest of the Bush Honeysuckles, being a very profuse bloomer, and the bush later completely covered with bright red berries.

L. Morrowi. 4 to 5 feet. From Japan. Bush an upright grower; blossoms are white and appear in May or June. The bright red berries that come in autumn are its chief attraction.

L. Tatarica (Tartarian Honeysuckle). 6 to 8 feet. A strong, upright-growing shrub; blossoms are pink and make a fine contrast with the dark green foliage.

L. Tatarica var. grandiflora. 6 to 8 feet. Blossoms large, red striped with white.

HIGH BUSH CRANBERRY, see Viburnum
INDIAN Currant, see Snowberry

Kerria - Corchorus

K. Japonica. 4 to 6 feet. A free flowering shrub with upright, slender green branches. The tops often kill back, but new shoots come up that bloom from July until frost. Flowers are double yellow. A desirable shrub.

WHITE KERRIA, see Rhodotypos**Lilac - Syringa**

This group is so well known that there is no need of extended description. To reach perfection, should have moist, rich soil. We would call special attention to the newer varieties, as great improvement has been made in them.

Persian Lilac (*S. Persica*). Usually does not grow to be more than 4 to 6 feet in height; branches slender; foliage small; loose clusters of purple flowers.

S. Rothomagensis. Very much like the Persian in growth; flowers are reddish purple.

Common Purple Lilac (*S. vulgaris*). 8 to 10 feet. Bluish purple flowers; well known.

Common White Lilac (var. *alba*). 8 to 10 feet. Cream-white flowers.

Single Lilacs

Charles X. 6 to 8 feet. A strong-growing sort, with large, shining leaves; trusses large, reddish purple.

Cærulea. One of the best. Bud is light purple; when fully opened is clear blue. Truss large.

Marie Le Graye. 6 to 8 feet. Large panicles of white flowers. One of the very best.

Ludwig Späth. 6 to 8 feet. Panicles long; individual flowers large, dark purplish red, distinct; the finest of its color.

Lilac Villosoa. 6 to 8 feet. From Japan. The large branching panicles appear about two weeks after the other Lilacs, are borne well above the bush and vary in color from light pink to lavender. The heavy, leathery, glossy dark green foliage, (entirely different from other Lilacs) make it valuable either in groups or as single specimens. Bush a strong, stocky grower.

Double Lilacs

Belle de Nancy. 6 to 8 feet. Panicles large, satiny rose, almost white in center. Very fine.

Mad. Lemoine. 5 to 8 feet. Pure white; a good grower; panicles large; a free bloomer.

Pres. Grevy. 5 to 8 feet. Individual flowers of the largest size, very double; trusses large; one of the best blue sorts.

S. Virginite. Flowers large, double, tender rose, shade of Souvenir de la Malmaison rose.

MOSS LOCUST, see Acacia



Rose-Colored Weigela—*Diervilla Rosea*. (See page 21.)

Flowering Plum - Prunus

Purple-leaved Plum (*P. Pissardi*). 8 to 10 feet. A small tree or shrub. The foliage and young shoots are of a rich reddish purple, which they retain throughout the season. Not perfectly hardy in this latitude.

Double-flowering Plum (*P. triloba*). 5 to 8 feet. A large shrub or small tree; the branches are covered early in the season, before leaves appear, with small, double, pink flowers. Very desirable.

Cistena. We are pleased to credit Prof. N. E. Hansen of South Dakota with furnishing the Northwest a purple-leaved shrub that is adapted to our climate. This is a cross between the Dakota Sand Cherry and the *Prunus Pissardi*. In habit of growth and glossiness of leaf it resembles the sand cherry. The foliage, however, has the rich purple red color of the *Prunus Pissardi*. We consider this very desirable. Supply is limited.

Privet *Ligustrum*

The *Ligustrums* are not only good hedge plants, but are one of the fine things for groups on the lawn. They are almost evergreen, and of dense, shapely habit. Sometimes in a very severe winter, they will kill back a little, but soon recover.



Spirea Van Houttei. (See next page.)

Mock Orange—*Philadelphus*.**PRIVET—Continued.**

Amoor (North). A fine shrub of upright growth. Its pure white flowers appear in June and are followed by bluish black seeds.

Polish Privet. In our last catalog we stated we believed in this variety we had found a Privet that was perfectly hardy in this climate. So far as winter killing is concerned it has proven hardy, but a summer blight has affected it to such a degree that we have discontinued growing it.

L. Regelianum. This is our favorite. The horizontal, sometimes drooping branches are distinctly beautiful. The plant is dense and compact, growing to 6 or 8 feet. Blooms in June and July, and has berries like preceding.

Quince - Cydonia

C. Japonica (Japan Quince). 3 to 5 feet. Foliage bright green and glossy. Bright scarlet-crimson flowers in early spring before the leaves are developed. Blossom buds not perfectly hardy in this latitude.

Rhodotypos

R. kerrioides (White Kerria). 3 to 6 feet. Bears an abundance of white flowers in May; foliage is attractive; bush a slender grower; hardy.

RUSSIAN OLIVE, see Elaeagnus**ROSE OF SHARON, see Althea****Syringa - Philadelphus**

Also known as Mock Orange. Are mostly large shrubs, growing from 6 to 10 feet high. Of vigorous habit, very hardy, with large, handsome foliage and beautiful white flowers produced in great profusion. They merit a place in every collection of shrubbery.

Garland Syringa (*P. coronarius*). 5 to 6 feet. One of the first to bloom. Pure white, highly scented flowers.

Garland Syringa (var. *alba flore pleno*). Flowers are partly double; very fragrant.

Golden-leaved Syringa (var. *aureus*). A very pretty plant, growing 4 to 5 feet high, with golden yellow foliage. It keeps its color the entire season and is valuable for planting with purple-leaved shrubs.

P. grandiflora. 8 to 10 feet. The strongest grower and largest flower of the group; blooms in June; slightly fragrant.

P. Lemoinei erectus. A charming variety of upright growth; flowers small, yellowish white, fragrant, completely covering the bush.

SILVER THORN, see Eleagnus**SNOWBALL, see Viburnum****Spiraea - Meadow Sweet**

These hardy shrubs are well adapted to various locations and soils; easily grown and profuse bloomers. The bloom period of the different sorts extends from May until September.

S. arguta. 4 to 6 feet. Of dwarf, slender, graceful habit; foliage fine, light green; blossoms very early, last of April or first of May.

S. Bumalda, var. Anthony Waterer. 2 to 3 feet. An improved variety of this type; dwarf, upright grower, covered from June or July until fall with large heads of dark crimson flowers. Darker than Bumalda. A valuable addition to the list.

S. Billardi. 4 to 6 feet. Medium sized, upright grower with spikes of rose-colored flowers in July.

S. callosa alba (Dwarf White Spirea). 2 to 3 feet. Similar in habit and growth to Anthony Waterer. The blossoms, however, are pure white; a free and continuous bloomer. Works in very nicely in borders with Anthony Waterer.

Froebelli. Very much like Anthony Waterer except that it is a taller grower and the blossom is a lighter red.

S. opulifolia (Nine Bark). 6 to 8 feet. The largest-growing species of this group; blossoms in June. Valuable for massing and also as background for other shrub planting.

S. opulifolia, var. aurea. 6 to 8 feet. Very much like the former, except that the foliage is yellow in spring, changing to golden bronze in autumn.

S. prunifolia fl. pl. (Bridal Wreath). 4 to 5 feet. A fine variety with plume-like leaves. The branches are covered in May with small, double, white flowers. Is in bloom for some time. Unfortunately it is not perfectly hardy in the North.

S. sorbifolia. Of a vigorous species with leaves like the mountain ash, and long, elegant spikes of white flowers in July.

S. Van Houttei. 4 to 6 feet. Without question the finest variety in the collection. The branches droop gracefully and when covered with bloom the latter part of May it is a beautiful sight. Makes a nice hedge to divide the lawn from the garden; foliage is beautiful at all seasons. Perfectly hardy. Is sometimes erroneously called Bridal Wreath. Much used in all good landscape work. Clusters of twenty to thirty flat white florets make up the racemes, and these clusters are set close along the drooping stem.

Snowberry - Symphoricarpos

These are especially valuable for planting in the shade and in undergrowth.

S. Racemosus (Snowberry). 3 to 4 feet. Flowers small, pink, in June or July; foliage dark green; berries large, white, and hang well into winter.

S. vulgaris (Indian Currant, Coral Berry). 3 to 4 feet. Similar to Snowberry, except berries are smaller and are red.

Sumac - *Rhus*

Purple Fringe, or Smoke Tree (*R. cotinus*). A much admired shrub for its curious fringe or hair-like flowers that cover the whole surface of plant in mid-summer. 10 to 12 feet.

Common Sumac (*R. glabra*). 6 to 8 feet. In many sections so plentiful as to be considered a nuisance, yet can be used with good effect in landscape work. The brilliant-colored foliage in autumn makes a fine contrast with a dark background.

Staghorn Sumac (*R. typhina*). A large shrub or tree. Brilliant foliage and scarlet fruit in autumn.

Cut-leaf Sumac (var. *laciniata*). 4 to 5 feet. A very striking plant of medium size, with deeply cut leaves resembling fern leaves, dark green above and glaucous below, turning to a rich red in autumn.

Tamarix

Amurensis. 6 to 8 feet. A very beautiful shrub, with small leaves somewhat resembling those of the Juniper, and delicate, small, pink flowers in spikes. The hardiest Tamarix.

Viburnum - Arrowroot

V. dentatum. Has glossy green foliage, white flowers in June; crimson berries turning blue in autumn. One of the best shrubs for landscape planting.

V. lentago (Sheepberry). Grows 20 to 30 feet high, white flowers in cymes in May and June. Large oval blue-black fruit in autumn.

V. lantana. 6 to 8 feet. Large-growing shrub with soft, heavy leaves; large clusters of white flowers in May, followed by red berries that turn black as they ripen; retains its foliage late.

V. opulus (High Bush Cranberry). 5 to 6 feet. Both ornamental and useful. Its late red berries, resembling cranberries, hang until destroyed by frost late in the fall. Resemble the snowball in wood and foliage.

V. opulus var. sterilis (Common Snowball, Guelder Rose). 6 to 8 feet. A well-known favorite shrub of large size, with globular clusters of pure white sterile flowers the latter part of May.

Japanese Snowball (*V. plicatum*).

Japanese Snowball, Single (*V. tomentosum*).

We have found the last two varieties not hardy in this latitude.



Spirea Anthony Waterer.

Weigela - Diervilla

A valuable family, handsome in foliage as well as flowers. Are easily grown and adapted to a variety of soils. The flowers are trumpet-shaped, and are borne thickly in clusters along the stem.

D. Desboisi. 6 to 8 feet. A beautiful variety with deep rose-colored flowers resembling Rosea, but darker. One of the best Weigelas.

D. Eva Rathke. 6 to 8 feet. A charming new Weigela with bright crimson flowers; a beautiful, distinct shade. Blooms all summer. Not quite as hardy as Rosea.

Rose-colored Weigela (*D. rosea*). 6 to 8 feet. The best known of the Weigelas. An elegant variety with fine rose-colored flowers in June.

Variegated-leaved Weigela (*D. nana variegata*). 3 to 6 feet. Of dwarf habit; leaves are finely margined with creamy white; blossoms resemble Rosea. Not perfectly hardy.

Witch Hazel - *Hamamelis*

H. Virginiana (Common Witch Hazel). 6 to 7 feet. A native of the Atlantic states. Small yellow flowers, which appear late in the fall.

Landscape Work

We are in a position to make plans and execute the planting. If you will give the dimensions and general lay of the property you wish to develop, we will be pleased to submit a sketch outlining the work. We can save you money and give you goods that are adapted to your needs.



Common Snowball—*Viburnum opulus sterilis*.

Climbing Vines

Ivy - Ampelopsis

Virginia Creeper, or American Ivy (*A. quinquefolia*). A perfectly hardy, rapid climber, with large, five-lobed leaves which change to bright scarlet or crimson in autumn.

Var. Engelmannii. Shorter jointed and having finer foliage than *Quinquefolia*. Clings to brick or stone. A good grower and hardy. The best for the North and Northwest.

Boston, or Japan Ivy (*A. Veitchii*). From Japan. It is a splendid plant for covering any object, as it clings perfectly to the smoothest surfaces. The foliage is a bright glossy green, changing to bright tints of scarlet, crimson, and orange. Kills back some in a cold, dry climate.

Aristolochia

Dutchman's Pipe (*A. Siphon*). A native species of climbing habit and rapid growth, with magnificent light green foliage, ten to twelve inches in diameter, and curious, pipe-shaped, yellowish brown flowers; a splendid variety for archways or verandas.

BOSTON IVY, see Ampelopsis

Bittersweet - Celastrus

Bittersweet (*C. scandens*). A native climbing or twining plant, with fine, large leaves, yellow flowers and clusters of orange-capsuled fruit. It grows 10 to 12 feet in a season.

Clematis

This family of plants is noted for its rapid, slender growth, delicate foliage and profusion of bloom through the summer. They do best in rich soil, and where they can have plenty of sun. We give a few of the best only. Give winter protection in this section.

Large-Flowering Sorts

C. Duchess of Edinburgh. Double white.

C. Jackmani. Flowers from 4 to 6 inches in diameter, intense violet-purple, with a velvety appearance. Hardy. A free grower, and frequently blossoms from midsummer until frost.



Clematis paniculata.



Ampelopsis Engelmannii.



Scarlet Trumpet Honeysuckle—*Lonicera*.

C. Henryi. New, and one of the best perpetual hybrids; of robust habit; not as free a bloomer as Jackmani. The flowers are white, large and very showy.

C. Madame Edouard Andre. Flowers large, of a beautiful, bright, velvety red; free-flowering and continuous bloomer.

Small-Flowering Sorts

C. coccinea. Flowers scarlet, small, and bell-shaped; a pretty sort.

C. paniculata. A great novelty from Japan. It has proved to be one of the most desirable, useful and beautiful of hardy vines; a luxuriant grower and profuse bloomer. Small, white, fragrant flowers in September. It is particularly useful for covering verandas, pillars, fences, where a trellis or support can be provided for it to climb on. It makes a growth of from twenty-five to thirty feet in a single season, and

should be cut back to the ground each season.

C. Virginiana (American White Clematis). A remarkably rapid climbing plant growing to the height of 20 feet, producing a profusion of flowers in August.

Lycium

Chinese Matrimony Vine (*L. Chinense*). A vigorous climber, covered with small, star-shaped purple flowers, succeeded by brilliant scarlet berries which remain on the vine until winter. Thrives everywhere.

Climbing Honeysuckle - Lonicera

Favorite vines with delightfully fragrant flowers. Perfectly hardy and adaptable to any purpose.

Hall's Japan Honeysuckle (*L. Halliana*). A strong, vigorous, almost evergreen sort, with pure white flowers, changing to yellow. Very fragrant and covered with flowers from July to November. Holds its leaves until January.

Scarlet Trumpet Honeysuckle (*L. sempervirens*). A strong, rapid grower; blooms very freely the entire season; bright red trumpet-shaped flowers.

Periwinkle; Myrtle - Vinca

V. minor (Trailing Myrtle). A low, creeping plant used largely in cemetery work and in covering the ground in shady places. Has evergreen, shining foliage and small blue flowers.

Trumpet Flower - Tecoma

T. radicans (American Trumpet Flower). A very robust, rapid-growing vine with large, scarlet, trumpet-shaped flowers in August.

Wistaria

W. Sinensis (Chinese Wistaria). One of the most rapid growing of all the climbing plants. Grows from 15 to 20 feet in a season. Has long, pendulous clusters of pale blue flowers in May or June and sometimes in autumn.



Clematis Jackmani.



Buckthorn Hedge.

Hedges, Screens and Shelter Belts

For Ornamental Hedges, Spirea Van Houttei, *Hydrangea paniculata grandiflora*, *Rosa Rugosa*, Amoor Privet North, and Thunberg's Barberry are being used quite extensively and with excellent satisfaction. For an evergreen hedge there is nothing better than Norway Spruce and Arborvitae.

For Screens to cut off unsightly views, etc., such shrubs as Tartarian Honeysuckle, *Philadelphus grandiflora* and common Lilac work in very nicely. These will attain a height of 8 to 10 feet. Where a taller screen is desired, Laurel-leaf Willow and Evergreens may be used.

Shelter Belts. Spruces and Pines are the best for this purpose. Planted on the north and west side of buildings they shut out the cold winter winds and make all more comfortable, to say nothing of the saving in fuel for the home and feed for the stock. By using medium-size trees for these belts, the expense is but little as compared to the benefit derived.



Privet Hedge.

Western Catalpa—*Catalpa speciosa*.Silver Maple—*Acer dasycarpum*.

Hardy Shade and Ornamental Trees

The figures immediately after the name indicate about the height of trees at maturity.

There is a growing tendency among the people to make home beautiful, and the judicious use of shade and ornamental trees goes a long way toward attaining this. The up-to-date farmer, as well as the owner of city and suburban property, realizes that a well-kept lawn, nice shade trees and good windbreaks add not only to the beauty of the place, but to the cash value as well.

In planting, one should have some definite object in view. It is not advisable to plant, hit-or-miss, whatever happens to be handiest or perhaps cheapest. Rather make a careful selection of the trees that will group well together, and give a pleasant view to the landscape. If you do not know just how to do this, send us a sketch of your place, and about how much you wish to expend. We may be able to help you in this matter.

A List of Trees Recommended for Various Purposes

For streets, roads, and wide avenues.—American Elm, Sugar and Silver Maple, Carolina Poplar, Norway Maple, and Box Elder.

For driveways through lawns and parks.—Norway Maple, *Catalpa speciosa*, American Linden, Laurel-leaf Willow.

Single specimens of large growth to be branched from the ground.—The Birches, American Linden, Norway, Purple Norway, Sycamore and Cut-leaf Maples; Austrian, White and Scotch Pine; Norway and Colorado Spruces.

Chinese Catalpa—*Catalpa Bungei*.

Single specimens of medium growth to be branched from the ground. Laurel-leaf Willow, Oak-leaf Mountain Ash, Flowering Thorn, Hemlocks, White Pines, Siberian Arbor-vitae, Pyramidal Arbor-vitae, American Arbor-vitae.

Trees that thrive in moist locations.—American Elm, American Linden, Ash, Catalpa, Poplars and Willows.

Trees that thrive on dry knolls or poor soil.—Silver-leaf Maples, Poplars, and Box Elders.

Flowering Trees.—Judas Tree, Fringe Tree (white and purple), Lindens, Horse-Chestnuts (red and white), Cherry (white), Catalpa speciosa, Thorns (pink, scarlet, and white).

Cut-leaved Trees.—Cut-leaved Birch, Wier's Cut-leaved Maple, Imperial Cut-leaved Alder.

Purple and Scarlet-leaved Trees.—Purple Norway Maple, Rivers' Purple-leaved Beech.

We are often asked, "Why do you not list your trees, shrubs, etc., under the common name, so we may know what we are talking about?" As far as possible to do so, we have placed the common name first, and the botanical name immediately after the common name. You will find all varieties listed under both the common and botanical name in the index.

Ash - *Fraxinus*

American White Ash (*F. Americana*). 50 to 60 feet. Probably the best of the Ash family. Valuable for timber or shade. Should have plenty of room to develop.

Beech - *Fagus*

The Beeches are hardy and thrive best in a deep, rich clay soil. The glossy foliage and gray bark form a fine contrast. Best success will be obtained by planting small specimens and pruning severely at time of transplanting.

American Beech (*F. Americana*). 40 to 50 feet. One of our finest native trees.



American White Ash—*Fraxinus Americana*.

Rivers' Purple-leaf Beech (*F. sylvatica Riversi*). 30 to 40 feet. The finest of all purple-leaf trees, as the foliage has fine coloring throughout the entire season. The habit of growth is compact and symmetrical.

Birch - *Betula*

The trees of this group are hardy, and succeed on light soils as well as in ordinary locations. Their light, airy foliage, graceful form and beautiful bark make them valuable for either landscape work or lawn specimens.

European White Birch (*B. alba*). 30 to 40 feet. Quite erect when young. After four or five years' growth the branches begin to droop gracefully. Bark silvery white. Very effective when planted along lake shores or streams.

Paper, or Canoe Birch (*B. papyracea*). 40 to 50 feet. An American variety. A vigorous, upright grower, with white bark.

Cut-leaf Weeping Birch (*B. laciniata*). 30 to 40 feet. Beyond question one of the most elegant of all weeping or pendulous trees. Its tall, slender, yet vigorous growth, graceful, drooping habit, silvery white bark and delicately cut foliage present a combination of attractions rarely met with in a single tree.

BOX ELDER (see Maples)

See pages 47 and 48 for formulas of insecticides and fungicides, and data as to the proper time for spraying.

American Elm—*Ulmus Americana*.

Catalpa

Hardy or Western Catalpa (*C. speciosa*). 30 to 40 feet. A valuable, upright, rapid-growing tree, that is being extensively planted in the West for railroad ties, telegraph poles, etc. The flowers (which appear in June) are borne in large clusters, are creamy white, slightly mottled inside, and are followed by long, bean-like pods that remain on the tree during the winter. Leaves are very large, yellowish green.

Chinese Catalpa (*C. Bungei*). A species from China; of dwarf habit, growing only 3 or 4 feet high. When grafted on stems 7 to 8 feet high, it forms a very effective umbrella-shaped tree. Not perfectly hardy in this latitude.

Crab - Pyrus

Bechtel's Double-flowering Crab (*P. angustifolia*). 20 feet. About the middle of May the trees are covered with beautiful, double, pink, sweet-scented flowers, that at a distance look like small roses. Tree is a moderate grower, hardy and of upright habit. One of the very best.

Elm - Ulmus

American White Elm (*U. Americana*). 50 to 60 feet. In our estimation has no superior for street planting or large lawns. Of large size, rapid growth, and widespread branches, that droop gracefully with age. With the rest of this genus, it prefers a low, damp location, but will do well in any ordinary soil. Should have plenty of room to develop.

Camperdown Weeping Elm. When grafted from 6 to 8 feet high, forms a large, handsome head; branches often extend horizontally several feet before drooping. A fine variety.

Hackberry - Celtis

American Nettle Tree (*C. occidentalis*). 30 to 35 feet. A fair-sized native tree, of irregular growth, with elm-like leaves and rough bark.

Horse-Chestnut - Aesculus

A valuable tree, having large spikes of flowers in May and June. Do best in a deep, rich soil, as on dry soil the leaves are liable to blight and drop early in the season.

American Horse-Chestnut, or Buckeye (*A. glabra*). 50 to 60 feet. The fastest grower of this species. Leaves smooth, flowers yellow; blooms before others.

Honey Locust - Gleditschia

Honey Locust (*G. triacanthos*). 40 to 50 feet. A large, vigorous-growing native tree, with long thorns and delicate foliage. In many sections is used for hedges.

Linden - Tilia

American Linden, or Basswood (*T. Americana*). 50 to 60 feet. One of the best large-sized rapid-growing trees. Suitable for either street or lawn planting. Should be given plenty of room to develop. Foliage large; flowers borne in large clusters, are very fragrant.

European Linden (*T. Europaea*). Not so large a tree as the former, more compact in form. The leaves are smaller than the American, but similar in shape.

Maple - Acer

This group of trees is hardy, easily transplanted and comparatively free from disease. They are equally valuable for street or lawn planting. Wier's and Schwedler's make very fine lawn specimens. The North American species, especially, have very brilliant colored foliage in the fall.

Silver Maple (*A. dasycarpum*). 50 to 60 feet. Of rapid growth, large size and irregular rounded form; foliage bright green above and silvery white beneath. Tree very hardy and easily transplanted. Valuable where quick shade is wanted.

Ash-leaved Maple, Box Elder (*A. Negundo*). 30 to 40 feet. A native tree, easily distinguished by its ash-like foliage of light green color. Well adapted to a great variety of soils and locations, is hardy, a very rapid grower, and therefore especially valuable where quick shade is desired.

Linden or Basswood—*Tilia Americana*.

Norway Maple—*Acer platanoides*.

Norway Maple (*A. platanoides*). 40 to 50 feet. The most popular of the Maple family for lawn or street planting; of fairly rapid growth, forms a well-rounded head, with large, deep green foliage that holds its color until late autumn. Is very free from injurious insects.

Wier's Cut-leaved Silver Maple (*Wierii laciniatum*). 35 to 40 feet. This is a variety of the Silver-leaved Maple, with cut or dissected foliage. Its growth is rapid, shoots slender and drooping, giving it a habit almost as graceful as a cut-leaved birch. A very desirable tree.

Ash-leaved Maple—*Acer negundo*.

Siberian Maple (*A. Ginnala*). Of dwarf and compact habit, with medium or small leaves. Makes a very pretty small tree, or can be used as a large shrub, perfectly hardy. Brilliant crimson in autumn.

Purple-leaved Norway Maple (*A. platanoides Schwedleri*). 30 to 35 feet. One of the most beautiful trees we know. Foliage in spring is brilliant purple, later changing to a dark, rich green. Leaves on the new growth during the summer are bright purple, making the tree always beautiful. Similar in habit of growth to the Norway.

Red, or Scarlet Maple (*A. rubrum*). A native species of medium size and rounded head, produces deep red blossoms which appear before the leaves. In autumn the foliage turns to brilliant scarlet, which makes the tree very conspicuous and beautiful.

Sugar Maple (*A. saccharinum*). 50 to 60 feet. A well-known native tree, of elegant pyramidal form. Its stately growth, fine foliage and form, with its brilliant autumn coloring, make it desirable as a shade and ornamental tree. Especially valuable for street planting.

Sugar Maple—*Acer saccharum*.

Mulberry - *Morus*

Russian Mulberry (*M. Tartarica*). Is largely planted for screens and windbreaks, also used for shade in hen yards. The fruit, which is rather small, is greatly appreciated by the birds and fowls.

Weeping Russian Mulberry (*M. Tatarica pendula*). One of the most graceful weeping trees in existence, forming a perfect umbrella-shaped head, with long, slender branches drooping to the ground parallel to the stem. It has beautiful foliage, rather small, handsomely cut. Is grafted on stems 6 to 8 feet high.

Mountain Ash - *Sorbus*

European Mountain Ash (*S. aucuparia*). Of upright, stocky growth, covered from midsummer until winter with clusters of orange-colored berries.

Oak-leaved Mountain Ash (*S. aucuparia queriefolia*). Of the same habit of growth as above. The leaves are deeply lobed, resembling the oak.



Lombardy Poplar—*Populus nigra fastigiata*.

Oak - *Quercus*

White Oak (*Q. Alba*). 50 to 60 feet. One of the largest and best of our native trees. In common with the other oaks, is of rather slow growth at first, but, if given good soil and room, soon develops into splendid specimens. Leaves are smooth, bright green, turning to purplish color in autumn.

Burr Oak (*Q. macrocarpa*). 30 to 40 feet. A native western tree of medium size. Its striking characteristics are the mossy cup that holds the acorn, the corky bark on the branches, and the large, heavy, dark green leaves.

Pin Oak (*Q. palustris*). 40 to 50 feet. The branches droop with age. Foliage deep green, and finely divided. One of the best for street planting.

Red Oak (*Q. rubra*). 50 to 60 feet. An American variety of large size and rapid growth. Foliage purplish red in autumn.

Black Oak (*Q. tinctoria*). 50 to 60 feet. A rapid grower, and will grow in poorer soils than the other oaks. Not so handsome as some of the other sorts. Valuable for timber.

Poplar - *Populus*

Carolina Poplar (*P. monilifera*). 40 to 50 feet. We think this leads as a rapid-growing tree. Needs some pruning back for a few years after planting; rarely produces suckers; also good for screens and shelter belts. Foliage large, glossy green.

Lombardy (*P. nigra italicica*). A well known upright, rapid growing tree that fills in well in some landscape work. Foliage is a bright light green, lighter on under side.

Ginkgo - *Salisburia*

Maidenhair Tree (*S. adiantifolia*). A medium-sized tree from Japan. The foliage is thick and clean cut, resembling the leaves of the Maidenhair Fern. Rare and desirable.

Sycamore - *Platanus*

As an ornamental tree for large grounds, or as a shade tree for street planting, this has no superior. The foliage is heavy, and not subject to the ravages of insects.

American Plane, Buttonwood (*P. occidentalis*). 40 to 50 feet. A large, rapid-growing tree that is suitable for street or avenue planting.

Oriental Plane (*P. Orientalis*). 40 to 50 feet. Similar to the above. Largely planted in the East.

Tree of Heaven - *Ailanthus*

A. glandulosa. 40 to 50 feet. A rapid-growing tree that does well on poor soils and smoky city streets where other trees fail. The pinnate palm-like foliage is useful in producing tropical effects.

Thorn - *Crataegus*

These are classed as small trees or large shrubs. They are hardy and do well in any dry soil. Are not as easy to transplant and make grow as we could wish.

American White Thorn (*C. coccinea*). 10 to 12 feet. A fine native variety; single white flowers early in the season, scarlet fruit in the fall. The earliest to bloom.

Cockspur Thorn (*C. crus-galli*). 10 to 12 feet. Very pretty dwarf tree with wide-extended branches, giving it a flat top effect. Flowers white tinged with red; fruit scarlet, hangs on well.

Double-flowering Thorn (*C. oxyacantha flore pleno*). Blossoms resemble clusters of small white roses.

Paul's Double Scarlet Thorn (*C. Oxyacantha coccinea flore pleno*). Flowers large, double, bright carmine red; the best of its color.

Double Red Thorn (*C. coccinea rubra flore pleno*). Blossoms rose-colored. A good companion for the two preceding sorts.

Willow - *Salix*

S. laurifolia. 20 to 25 feet. A rapid-growing tree that deserves a larger place in our landscape work than it receives. Its dark, glossy foliage makes a fine background for shrubbery; also valuable for screens, as it bears shearing well. Bark bright green; is very showy in winter, easily transplanted, and thrives in a variety of soils.

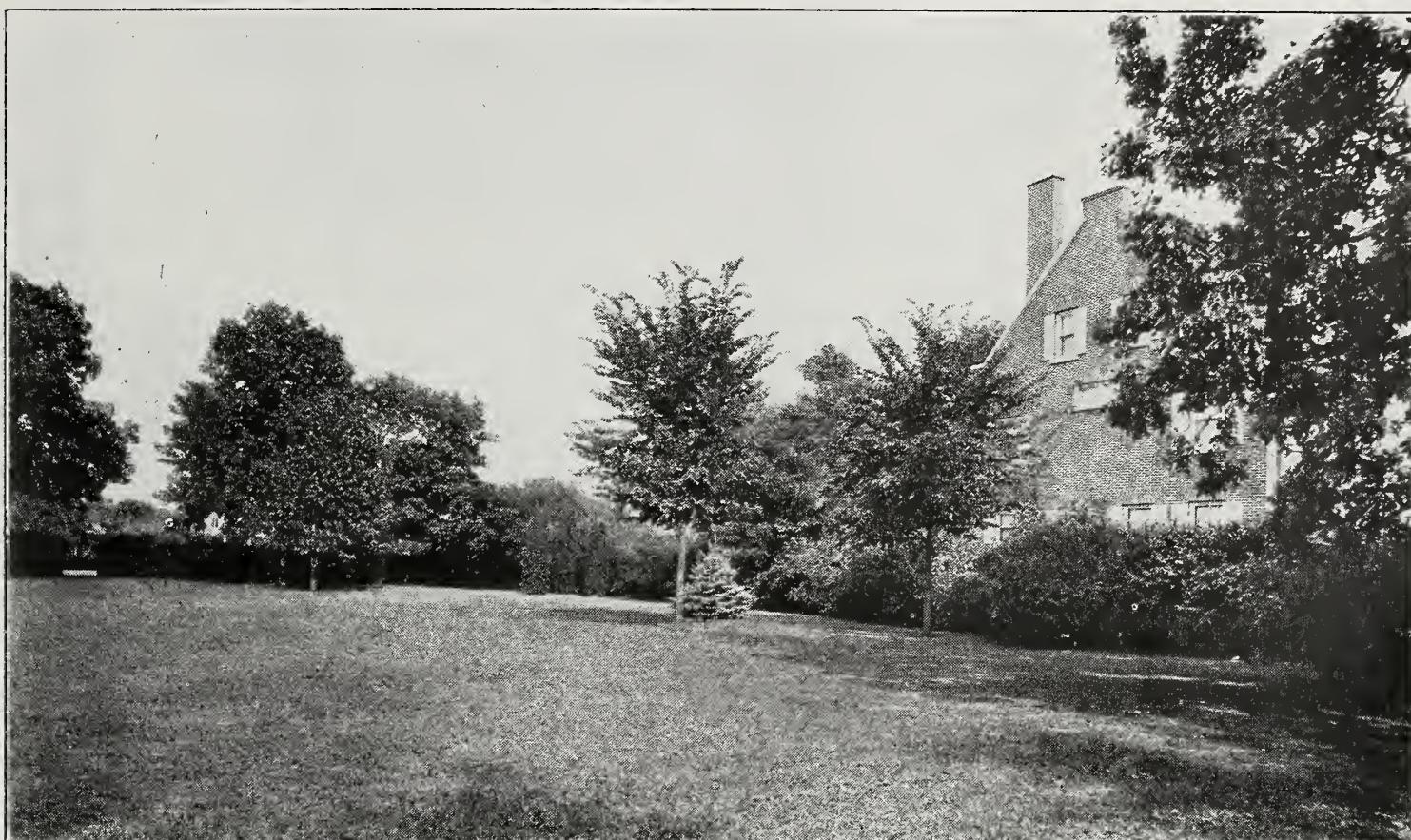
S. Wisconsin Willow. The best weeping Willow. A very graceful, rapid-growing tree that will stand more cold than any of the others.

Golden Willow (*S. vitellina*). Very effective in winter seasons when planted in groups, on account of its yellow bark. Should be severely trimmed each season to produce plenty of new growth.

Nut Trees

Black Walnut. 40 to 50 feet. The tree is of large size, good form and foliage; a valuable timber tree; nut is round and of good quality.

Butternut, or White Walnut. 20 to 40 feet. A native tree of spreading habit that produces a rough, longish nut, the kernel of which is sweet, oily, and rich.



A Fine Effect Obtained by an Open Lawn with Shrubs and Evergreens in the Background.

Evergreens

When received do not let the roots become dry or exposed to the wind and sun and if the weather is dry, dip the roots in water before planting. The size of the hole will depend upon the size of the tree to be planted, and it should be large enough to hold the clump of roots without crowding. If it occurs in digging that the surface soil is better quality than that found further down, as frequently happens, put a small quantity of this to one side and replace it in the hole before the tree is inserted. After adjusting the roots in the hole as nearly as possible in the position which they formerly occupied, fill the earth in gently and thoroughly around them, packing the soil firmly with the ball of your foot. As a finishing process, after filling the hole and firming the soil well about the tree, apply as a mulch several inches of well rotted straw, coarse manure, or grass.

Arbor-vitæ - Thuya

American Arbor-vitæ (*T. occidentalis*). 10 to 20 feet. The finest evergreen for hedges. It grows rapidly and soon forms a beautiful hedge, very dense. Is not adapted to turn stock, but forms a most desirable and ornamental screen to divide the lawn from other parts of the grounds, or any other like purpose. May be trained in any form desired, as no evergreen bears the shears with so little injury as this.



Dwarf Mountain Pine—*Pinus Mugho*.

Golden Arbor-vitæ (*T. aurea*). 8 to 10 feet. A beautiful variety of compact, globular form; color a lively yellowish green; one of the very handsomest.

Globe Arbor-vitæ (*T. globosa*). Of dense, dwarf habit, globular in outline; color a pretty light green; requires no shearing and always in good form.

Pyramidal Arbor-vitæ (*T. pyramidalis*). 10 to 12 feet. A superb, new and hardy sort, of very compact habit, like the Irish Juniper. Is rare and beautiful, and is largely planted in cemeteries and places where spreading trees would be out of place. This is perhaps the most valuable Arbor-vitæ in cultivation.

Siberian Arbor-vitæ (*T. Siberica*). 6 to 8 feet. Exceedingly hardy, keeping its color well in winter. Growth compact and globular; makes an elegant lawn tree of good value.

Fir - Abies

Balsam Fir (*A. Balsamea*). A rapid growing native tree with dark green foliage. Handsome while young, becomes somewhat straggling in appearance when it reaches full size.

A. Concolor. A native of the Rocky Mountains. Needles medium to long and vary in color from dark green to bluish shade. A desirable tree.

Douglas Fir (*A. Douglassi*). A Colorado species of rapid growth. Makes a large symmetrical tree. Foliage bluish green.

Hemlock (*A. Tsuga Canadensis*). Very graceful tree of loose open growth, somewhat drooping. Foliage bright green.



No. 1, Pyramidal Arbor-vitae. No. 2, Mugho Pine. No. 3, Colorado Blue Spruce. No. 4, Koster's Blue Spruce.
No. 5, American Arbor-vitae. No. 6, Concolor Fir.

Juniper - Juniperus

Red Cedar. (*Juniperus Virginiana.*) Pyramidal habit, bright rich green foliage.

Blue Cedar. (*J. Virginiana Glauca*). A blue form of the above. Hold the bluish color throughout the season.

Golden. (*J. Aurea*) New growth, bright yellow changing to bronzy yellow in winter.

Irish Juniper (*J. communis*, var. *Hibernica*) 6 to 8 feet. Effective in general landscape work and formal planting; upright, conical form; foliage bright, silvery green; not perfectly hardy in this latitude.

Pfitzeriana. Broad spreading irregular habit, usually as broad as it is high. Grayish green color. Desirable.

Savin Juniper. (*J. Sabina*) 3 to 4 feet. Of dwarf, spreading growth. Hardy and thrives well on poor soil; a favorite for rock work.

Tamariscifolia. Of low trailing habit, foliage bright glaucous green, very dense. Good for banks and rock work.

Pine - Pinus

Austrian, or Black Pine (*P. Austriaca*). 40 to 50 feet. A strong, sturdy grower; foliage long, dark green.

White Pine (*P. Strobus*). 40 to 50 feet. A strong, rapid-growing tree, with light, silvery green foliage. The best and most ornamental of our native Pines.

Scotch Pine (*P. sylvestris*). 30 to 35 feet. A very noble and rapid grower; tree has strong, erect shoots and glossy green foliage.

Dwarf Mountain Pine (*P. montana*). Of compact, spreading growth. Is more of a bush than tree; valuable in landscape work where a low, broad evergreen is needed. Very hardy.

Spruce - Picea

Norway Spruce (*P. excelsa*). 40 to 50 feet. A lofty, elegant tree of rapid growth and pyramidal habit. After the tree is 20 to 25 feet high the branchlets droop very gracefully. Probably the most extensively planted of any evergreen in this country; thrives in any well-drained soil. Valuable for windbreaks, screens, and hedges.

Colorado Blue Spruce (*P. pungens glauca*). 25 to 30 feet. A rare and elegant tree, with foliage of rich blue. One of the most distinct and striking of all the Spruce family. The trees we offer are of the genuine blue color. A free grower and perfectly hardy.

Our Evergreens are all one or more times transplanted, and are good below the ground as well as above. It is advisable to transplant some varieties with a ball of dirt to insure success. This adds a little to the cost, but it is well worth the extra expense. (See Price List.)



Pyramidal Arbor-vitae.



Hansa Roses.

Roses

Roses thrive best in a good, well-drained clay soil where they can have plenty of sunlight. Make the ground rich with well-rotted manure, and in spring severely prune all varieties except climbers and Persian Yellow. Cover in the fall with some coarse dry material. Those marked half hardy must receive extra care and protection.

Hybrid Perpetual

Most of this class are fragrant and bloom freely in June, and, while called perpetual, are not so in fact. Many sorts, however, give a liberal sprinkling of bloom in autumn.

Alfred Colomb. Bright rich crimson; leaves large and full; very fragrant; a superb sort in every respect.

Clio. New; satiny pink, with darker center; globular shape; fine in bud and flower; plant a strong grower and free bloomer.

Earl of Dufferin. Rich dark crimson, shading to maroon; large, full, fragrant; a good grower; one of the best dark roses.

Frau Karl Druschki. The flowers are large, of perfect form and snow-white in color; a free and perpetual bloomer. Claimed by many to be the best white Rose of its class yet introduced; bush a vigorous grower.

General Jacqueminot. Very fragrant; not very full, but large and effective. One of our best garden Roses.

General Washington. Deep crimson; very large and double; opens flat.

J. B. Clark. This splendid new Rose is a very strong grower with clean, heavy foliage. Flower large, deep scarlet overlaid with crimson.

John Hopper. Bright rose; large and full; free bloomer; one of the best old sorts.

Madame Plantier. Flowers pure white, of medium size; full, somewhat rosy in the bud form; produced in great abundance quite early in the season.

Magna Charta. A bright clear pink; very sweet; large, fine form; very double; free bloomer.

Marshall P. Wilder. Bright cherry red; of good size; very fragrant and perfectly double. Plant is a vigorous grower and continues long in bloom. One of the very best of its color.

Margaret Dickson. A very free grower, foliage large and dark. Flower white, with pale flesh center; petals are thick and bell-shaped, quite fragrant; a fine sort.

Paul Neyron. The largest variety in cultivation. Deep rose color, very full and double, finely scented, has good foliage and is a free bloomer.



Margaret Dickson.

Persian Yellow. Bright yellow; the most durable of this class. Finest hardy yellow rose.

Prince Camille de Rohan. Very dark, velvety crimson; large, moderately full, handsome.

Soleil d'Or (New). This new yellow Rose comes very highly recommended. The flower is full, large, globular-shaped, yellow shaded with red. A vigorous grower and said to be a free bloomer.

Ulrich Brunner. Bright cherry red; bush a vigorous grower and a free and continuous bloomer. One of the best.

American Beauty. Deep pink shaded with carmine; large, globular, very fragrant. Half hardy.

Clothilde Soupert. A fine, free-flowering sort, good for bedding or pot culture; outer petals white, shading to pink in center. One of the very best. Half hardy.

Hermosa. An old favorite that is always in bloom; flowers cupped, daintily formed and very fragrant. Half hardy.

La France. Delicate, silvery pink, large and double; very fragrant and a constant bloomer. Half hardy.

Moss Roses

Blanche Moreau. Pure white, large, full, of perfect form, and well furnished with deep green moss. Very strong grower.

Crested Moss. The deep pink buds are surrounded with a mossy fringe and crest; fragrant. One of the best.

Henry Martin. Fine rosy red. Large globular flowers, well mossed; fragrant. To our mind the best of all the Mosses.

Wichuraiana or Memorial Roses

These are of Japanese origin. Make a rapid growth and have a glossy green foliage. They are of trailing habit and are used in cemetery work for covering graves. Bloom in June and July.

We furnish them in pink and white.

Climbing Roses

Climbing American Beauty. We have handled this several seasons. It is very highly spoken of by reliable growers in the East who say it combines the good qualities of the American Beauty Rose with the strong growth of the climber, and claimed to be hardy with winter protection.

Baltimore Belle. Pale blush, nearly white, very double; blossoms in clusters.

Crimson Rambler. Is of vigorous habit, strong, rapid growth (10 to 12 feet in a season), with handsome, shining foliage. Produces, in marvelous abundance, large clusters of the brightest crimson, semi-double Roses, that remain perfect for some time. Is suitable for walls, fences, pillars, and porches.

Dorothy Perkins. A very good companion for the Crimson Rambler, as it is of the same habit of growth. Flowers are borne in clusters, are a beautiful shell-pink color and very fragrant. Where one wishes a "Pink Rambler" we advise using this variety.

Excelsa (Red Dorothy Perkins). We consider this the best of the Red Ramblers and believe as it becomes better known will take the place of the old Crimson Rambler. It has all the good points of the old sort and a much better foliage.

Flower of Fairfield (called by many the Ever-blooming Crimson Rambler). Similar to the Crimson Rambler in every way. A valuable acquisition to any rose garden.

White Dorothy Perkins. Of the same habit of growth as the Dorothy Perkins. Where a White Rambler is wanted, we recommend this variety.

Gold Finch. Light yellow, semi-double, very free bloomer.

Queen of the Prairie. Bright rosy red, large, compact and globular flowers; blooms in clusters; a good strong grower. One of the best.

Seven Sisters. A popular old variety, blooms in graceful clusters; color varies from dark to light red or pink.



Crested Moss Rose.

Baby Ramblers

Baby Rambler (Mad. Norbert Levavasseur). This Rose is a dwarf bush form of the Crimson Rambler, and is an ever-bloomer. May be used as a pot-plant or garden Rose, blooming continuously in either place. The blossom is of the same color and form as the Crimson Rambler, the clusters having from twenty to forty blossoms at a time. Is certainly a great acquisition.

Pink Baby Rambler. Flowers borne in clusters, are a beautiful pink. Continuous bloomer.

White Baby Rambler. Similar to above except that the blossoms are white.

Yellow Baby Rambler. Same only yellow flowers.



Excelsa Rose.

A Japanese variety that forms a strong, sturdy bush 4 to 5 feet high. The foliage is dark glossy green, impervious to the attacks of insects of all kinds. Makes a fine background for low shrubbery; also makes one of the very best shrub hedges. The flowers are single, borne in clusters and followed by large red seed-balls. Is very attractive and should be more largely used in landscape work. Perfectly hardy.

Var. rubra. Single; rosy crimson, succeeded by large brilliant berries of much beauty, which persist all through the autumn and early winter months.

Var. alba. Single, pure white, having five petals and highly scented.

Hybrid Rosa Rugosa

This valuable class of roses is the result of crossing the Hardy Rosa Rugosa and our common garden roses. This cross has given us varieties that will stand our winter without protection, and give an abundance of bloom during the entire summer.

Amelia Gravereaux. A splendid new variety with good Rugosa foliage. The blossom is a rich dark red without a tinge of purple. Very double.

Blanch de Coubert. Very large, pure white, semi-double and borne in clusters, very fragrant. The bush is a strong, sturdy grower, has the Rugosa foliage, and produces an abundance of bloom. Flowers are nearly 5 inches in diameter, and from five to ten in a cluster. Produced freely and lasting well. Perfectly hardy.

Conrad F. Meyer. Color silvery rose, fragrant, large, very double, and blooms all summer. The foliage does not show so much of the Rugosa type as Blanch de Coubert. Claimed to be not quite as hardy as some, but has stood four winters on our grounds without protection, and came through in perfect condition. We consider it the best of its color.

Hansa. Deep violet-red, double. Buds are borne in clusters and nearly all open at once. Has the true Rugosa foliage, and is one of the most valuable roses we have. It is absolutely hardy.

M. Lucian Villeminot. Another fine, light pink variety. Has good foliage but not the true Rugosa type. Blossom very full and of good shape.

Nova Zembla. A light flesh color, a good grower; a fine variety where this color is desired. Flower is very large and sweet scented.

Sweetbrier Rose

English Sweetbrier. This old garden favorite is valued on account of the delightful fragrance of the foliage. They require very little in the way of pruning and the shoots should be shortened only a few inches. If severely trimmed they will not blossom until another season's growth has been produced. Hardy.



Hedge of Roses.



Hardy Perennials

These can be used to best advantage in groups and beds on the lawn, as borders for drives, walks, or in front of shrubbery and in the garden. Some of the tall-growing sorts may be planted in among the shrubbery with good effect. Most of the perennials can be planted in the spring or fall. Soil should be kept well fertilized. A light covering of coarse, strawy manure or something that will not pack is beneficial in winter.

Achillea

A., The Pearl. 2 feet. Produces an abundance of small white flowers during summer months.

A. roseum. 15 to 18 inches. Flowers are rosy lilac in color and are produced freely during June, July and August.

Aconite - Monkshood

This plant seems especially adapted for planting in shady places. They form bushy clumps and produce their hood-shaped flowers on spikes about 3 feet high during July and August. Colors purplish blue, blue, and cream.

ALTHEA, see Hollyhock

Anchusa

(Dropmore Variety.) An improved variety that grows 4 to 5 feet high, produces an abundance of gentian-blue flowers in May and June.

Anemone - Wind Flower

Early-flowering Anemones are fine for rockeries and low borders. They do well in shade or sun. Must have a well-drained soil.

A. Japonica. Medium size, with two rows of petals; color rosy red, stamens bright yellow.

A. Japonica alba. Pure white, single.

Anthemis

A. tinctoria. 2 to 3 feet. Of bushy habit. Deep lemon-yellow flowers. June to August.



Achillea, The Pearl.



Delphinium and Shasta Daisy.



Asters.

Aquilegia - Columbine

Bloom in late spring and early summer; grow about 2 feet high and succeed in any ordinary garden soil. Worthy of more extensive planting.

A. Canadensis. The native Columbine; red and yellow.

A. alba. Flowers pure white.

A. cærulea (Rocky Mountain Columbine). Color blue and white. One of the best hardy flowers in cultivation.

A. chrysanthia. Golden yellow. Is in bloom for several weeks.

A. nivea grandiflora. Pure white, large flower. *Aquilegia.* All colors mixed.

Aster - Michaelmas Daisy

Very late-flowering; showy plants; fine for borders or for massing. Bloom in September and October.

A. elegans. Very light blue.

A. Novæ-Angliæ. Large; bluish purple, yellow center.

A. Novæ-rubra. Bright rose color.

A. White Queen. Large, white; free bloomer. 4 feet.

A. Dwarf Pink. A dwarf variety that grows 18 to 24 inches high. Very good.

Asclepias

A. tuberosa. One of the showiest of our native perennials. About 2 feet high and producing during June and July close, compact umbels of brilliant orange colored flowers.

Astilbe - Spirea; Goat's Beard

A. Japonica. A handsome plant, with small pure white flowers in large feathery panicles. Blooms in May out-of-doors. Is used largely for forcing.

Var. grandiflora. Flower-spikes large and more compact and individual flowers more numerous than in *Japonica*.

A. palmata. Abundant clusters of crimson flowers produced in June and July.

BLEEDING HEART, see *Dielytra Bocconia*

Handsome hardy perennial with a stately habit and finely cut foliage; and where bold subjects are desired, few will be found superior to it.

B. Cordata. Reaches a height of 5 to 8 feet. Grows well even in the poorest soil. The rather large cut leaf foliage works in well in shrub borders, flowers are creamy-white, are borne on the terminals, and appear in July and August.

Boltonia - False Chamomile

An autumn flowering plant with thousands of aster-like flowers open at once. Produces a showy effect. Season is during August and September. Thrives in any ordinary soil.

B. asteroides. 4 to 6 feet. Pure white. Is among the perennials what the Spirea Van Houttei is among shrubs.

A. latisquama. 4 to 5 feet. Lavender-pink; fine large flowers.

BABY BREATH, see *Gypsophila*

BLANKET FLOWER, see *Gaillardia*

Campanula - Bell Flower

A most important class of hardy plants for the perennial border or garden. They are of very easy culture, growing either in sun or shade.

C. pyramidalis. 4 to 5 feet. Large blue flowers, crowded on the tall spikes, forming a pyramid. August and September.

COLUMBINE, see *Aquilegia*



Aquilegia—Columbine.

CARDINAL FLOWER, see Lobelia**Chelone**

A handsome perennial, growing about 2 feet in height. Blooms during August and September.

C. glabra. Spikes of creamy-white flowers.

C. Lyoni. Heads of deep red flowers.

Convallaria

C. majalis (Lily-of-the-Valley). 6 to 8 inches. One of the most charming of the spring flowers. Flowers small, bell-shaped, very fragrant.

Coreopsis

C. lanceolata. Flowers deep golden yellow, borne on stems $1\frac{1}{2}$ to 2 feet high. Make very nice cut-flowers. The main crop of flowers comes in June, but it continues to bloom all summer.

Delphinium - Larkspur

Mr. W. C. Egan, the well-known writer and a great admirer of Delphiniums, says: "There is no hardy perennial more easily grown than the Delphinium. It revels in full sunshine and a deeply worked rich soil with plenty of water during dry spells. If given these it will fill your heart with joy and gladness in the richness and profuseness of bloom."

D. Cœlestinum. This is identical with the Formosum, except that it is a beautiful light blue.

D. Belladonna. The freest and most continuous blooming of all, never being out of flower from end of June until cut down by hard frosts in fall. The clear turquoise-blue of its flowers is not equaled for delicacy and beauty by any other flower. Grows about 2 feet.

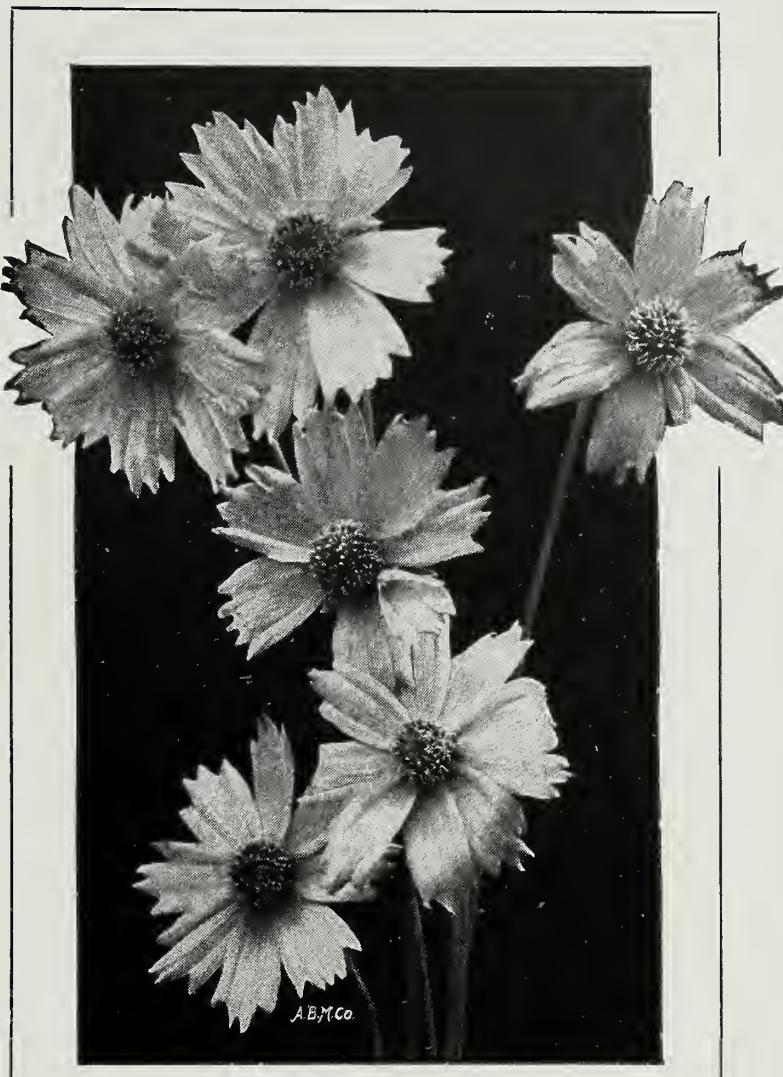
D. Chinensis. 18 inches. Flowers vary in color through all the shades of light blue.

Delphinium Chinensis Alba. A pure white form of the Chinensis.

D. formosum. 3 to 4 feet. The old hardy dark blue sort. Flowers all summer.



Gaillardia—Blanket Flower.



Coreopsis Grandiflora.

DIANTHUS, see Hardy Pink**Dielytra, or Dicentra**

D. spectabilis (Bleeding Heart). Blooms early in the spring. Makes very nice borders. Pink, heart-shaped flowers borne in graceful racemes.

Digitalis - Foxglove

A very satisfactory flowering plant, but is a biennial instead of a perennial.

DAY LILY (white), see Funkia**DAY LILY (yellow), see Hemerocallis****Funkia - Plantain or Day Lily**

The broad, massive foliage of these plants makes attractive groups and borders even when not in bloom. From 12 to 18 inches high.

F. cœrulea. Broad green leaves; blue flowers.

F. grandiflora. Pure white flowers, very fragrant.

F. undulata media picta. Green and white variegated foliage; purple flowers.

FLEUR DE LIS, see Iris**FLOWERING SAGE, see Salvia****Gaillardia - Blanket Flower**

G. grandiflora. 2 feet. One of the showiest and most effective of hardy plants. Begins flowering in June and continues throughout the summer. The center of the blossoms is dark reddish brown, petals are shaded orange, crimson and red and are from 2 to 3 inches across and borne on single stems. They do well on light soil. Must be well protected in the winter.



Hardy Garden Pinks.

Gypsophila - Baby's Breath

G. paniculata. 2 to 3 feet. Produces large panicles of very small white flowers. June, July, and August. Fine for decorating in connection with high-colored flowers.

GIANT DAISY, see Pyrethrum

GOLDEN GLOW, see Rudbeckia

Hardy Garden Pinks - Dianthus

An interesting class of plants that grow 10 or 12 inches high and bloom in May and June. There are now many cultivated varieties of superior quality, nearly all with a decided carnation fragrance. The foliage is grass-like, very thick and makes a good border. We have the improved varieties in Red, Pink, and White.

Helianthus - Sunflower

Is very free-flowering; succeeds on a variety of soils; makes very nice cut-flowers; also good for high borders or grouping in shrubbery on the lawn.

H., **Miss Mellish**. Flowers in September and October, grows about 6 feet high, with large, single, golden yellow flowers.

H., **Wolly Dod**. One of the best of the September-flowering varieties. Entirely distinct.

Hemerocallis - Yellow Day Lily

H. flava (Lemon Lily). 2 to 3 feet. A pretty plant, with long, narrow leaves; flowers are a pretty lemon color, fragrant and produced freely in June. Desirable.

H. Kwamso fl. pl. Leaves are larger and coarser than the Flava; flowers large, double, copper-colored; grows and does well in almost any location.

Hollyhock

These need no description. They are good in rows, groups or interspersed with shrubbery. To reach perfection they should have a deep, rich, well-drained soil. Protect the roots during the winter with a straw mulch. We offer strong plants in double white, pink, yellow, red, and maroon; single choice mixed and Allegheny, a fine new sort, semi-double and fringed.

Iris

This has been listed under various names, **Fleur de Lis**, **Liberty Iris**, and **German Iris**. These are one of the best early flowering perennials. No garden is complete without a good assortment of them. They are sure bloomers, easy to grow and the fine assortment of colors make them very desirable.

Augustina. Deep yellow marked with maroon, giving a coppery hue.

Blue Jay. Medium height, solid bluish lavender. One of our best.

Black Prince. Standards soft lilac purple. Falls rich velvety black.

Celeste. 36 inch. Beautiful light blue.

Florentina. Early white, tinged with blue and yellow.

Flavescens. Cream color.

Her Majesty. Standards soft rose. Falls red, deeply veined.

Ingeborg. (Intermediate.) 16 inch, large white, good. Very early.

Karput. Velvety violet purple.

Mad. Chereau. (Tall.) Standards and falls pure white, daintily edged with light blue.

Parisensis. (Early.) Standards purple, falls rich velvety black.

Pallida Dalmatica. (Tall.) Large blue flower, very wide foliage. One of the most desirable.

Pumila. Dwarf early flowering sort, grows about six inches high. Dark purple.

Rhein Nixe. Standards white, falls violet blue edged white. Tall.

Silver King. (Early.) Comes the nearest to white of any of this class we have tried.

Walhalla. (Intermediate.) 18 inch. Standards light blue, falls dark blue. Very early.

Wm. Third. The general effect of this is pink, the falls being darker than the standards.

Siberian Iris

Have narrow grass-like foliage. The blossoms are smaller than the other Iris. Are free bloomers and desirable.

Purple. Very free bloomer, dark purplish blue, about three feet high. Good for cut flowers.

Snow Queen. Creamy white. Very fine.

Alba. Tall, white.

Japanese Iris - Iris Kaempferi

Thrives best when planted in a moist soil, or where plenty of moisture can be supplied. Season of bloom is June or July.

Alba Plena. Double white, very large.

Beth Hallock. Large double bluish purple flowers striped white.

Blue Danube. Pure rich blue, yellow center.

Commodore Perry. Very dark violet red, double. Medium size.

Gold Bound. Large double white, yellow center.

Helen Von Siebold. Deep pink, white band.

Mahogany. Dark red, shaded maroon.

Prof. Georges. Pure rich plum purple, mammoth size.

Purple Emperor. Very dark purple, yellow center, large flower. A strong grower.



1 Augustina
2 Parisensis
3 Silver King

4 William Third
5 Madam Chereau
6 Her Majesty



Platycodon.

Liatris Pycnostachya

A showy and attractive plant that succeeds in a variety of soils. The long spikes of rosy purple flowers appear in July and August.

**Lobelia
Cardinal Flower**

L. cardinalis. Flowers produced on long spikes, 3 to 4 feet high, bright cardinal red; require lots of moisture.

**Mallow
Marvel**

The vigorous, strong-growing roots make a good clump in one season, from 4 to 6 feet high, which blooms freely from midsummer until cut down by frost. Is an herbaceous plant, tops dying back to the ground in the fall and coming up from the root in the spring. Grows well in any good rich soil. Colors, red, white, and pink.

**Monarda
Bergamot**

M. didyma. Flowers bright scarlet, produced in July.



Oriental Poppy.

Papaver - Poppy

P. orientale (Oriental Poppy). For a gorgeous display of rich brilliant coloring nothing can excel the Oriental Poppies during their period of flowering in May or June, and whether planted singly or in masses their large flowers and freedom of bloom render them conspicuous in any position.

Physostegia - False Dragon Head

The Virginica is probably the most desirable one of this group. During September and October it bears spikes of bright pink flowers. 3 feet.

Platycodon - Bellflower

These are very closely allied to the Campanulas. Of upright habit, and they bloom through July, August, and September. Very desirable.

P. grandiflorum. 1½ feet. Large, fine dark blue, star-shaped flowers.

P. grandiflorum album. A white-flowering form of the above.

Pyrethrum - Daisy

P. uliginosum (Giant Daisy). 4 to 5 feet. Is covered during July, August, and September with large, daisy-like flowers 2 to 3 inches in diameter.

Rudbeckia - Cone Flower

R. laciniata (Golden Glow). We doubt if any perennial has been more popular than this, or more largely planted. It fills a very important place; producing an abundance of beautiful, golden yellow, double flowers during the hot summer months, when they are greatly appreciated. Fine for cut-flowers. Attains a height of 6 to 8 feet in good soil.

R. purpurea (Giant Purple Cone-flower). Forms a bushy plant 2 to 3 feet high. Flowers cone-shaped, reddish purple with golden tips, 3 to 4 inches in diameter. Blooms from July to October.



Hollyhocks.

Salvia - Flowering Sage

S. azurea. A Rocky mountain species. Grows 3 feet high and produces during August and September pretty sky-blue flowers in the greatest profusion.

Scabiosa

Handsome border plants, succeeding in any ordinary soil if well drained and in a sunny location. They last a long time when cut and placed in water. *Caucasica* is lavender in color and is the best one. Grows 15 to 18 inches high.

Sedum Spectabile

One of the best of the Sedums, growing about 18 inches high with bright light green foliage and large heads of handsome, showy, rose-colored flowers. Blooms late in fall.

Shasta Daisy

These plants are free bloomers. The common variety grows from 12 to 18 inches high and has a white blossom about 1½ inches in diameter. Good for borders.

King Edward. Much stronger grower than the above and a larger flower. A valuable variety.

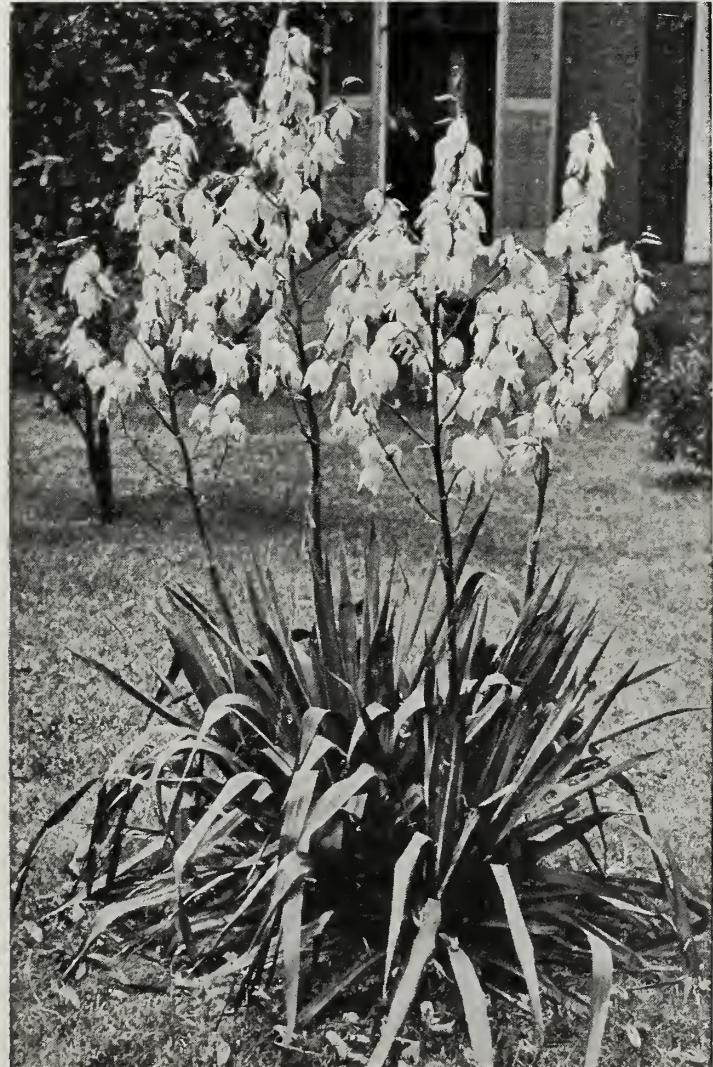
SPANISH BAYONET, see Yucca

Veronica - Speedwell

V. spicata. A good border plant, growing about 18 inches high. Produces long spikes of bright blue flowers during June, July, and August. Great favorites in the hardy garden. Unexcelled for cutting purposes.

Yucca - Spanish Bayonet

Y. filamentosa (Adam's Needle). A tropical-looking plant, with long, narrow leaves that remain green the entire year. It throws up a strong flower stem in the summer, 3 to 5 feet high, bearing a spike of creamy white bell-shaped flowers, which retain their beauty for a long time. Very hardy, and likes the sun and dry soil. The foliage is of strong, upright growth.



Yucca—Spanish Bayonet.



Monarda—
Bergamot.



Gypsophila Paniculata.

Peonies

There is quite a revival in the planting and demand for these old-time favorites. Their requirements are few. Give them a good, rich, deep soil and plenty of water and there will be bloom in abundance. They succeed best in an open, sunny location, but will do almost equally well in partially shaded places. While they are perfectly hardy, we think a mulch of coarse manure in this climate is beneficial, removing it early in the spring. They may be planted during September or October, or in the spring. The following varieties are selected with care from a long list and will be found satisfactory.

Couronne d'Or. A strong grower and free bloomer. Blossom very large, bell-shaped, creamy white.

Duke of Wellington. Large sulphur-white, fragrant; fine for cutting.

Edulis Superba. Early dark pink, a free bloomer, very desirable.

Eugenie Verdier. One of the very best peonies we have. Fragrant, large, free bloomer. Color outside petals light flesh pink shading to darker in the center. Must be seen to be appreciated.

Francis Ortegal. Purplish crimson, large, and fine.

Felix Crousse. Brilliant red, ball-shaped bloom; the popular color with florists; rather late.

Festiva alba. Large, globular, pure white with a few spots of carmine in the center; beautiful and sweet.

Festiva maxima. This is the most beautiful of all the white Peonies. The flowers are of extra large size, in clusters, and petals as fine as silk. Color pure white, with a crimson drop in the center.

Grandiflora rubra. Large, late; fine form, blood-red.

L'Eclatante. Color deep velvety crimson. Very double and full.

La Martini. Bright red; full; good.

M. Guerin. A deep pink tinged with carmine. One of the best of its color. Fragrant.

Modeste. Deep rose, bright, showy, fragrant; very large, distinct, and fine.

Mad. Lebon. Very double; medium size; bright cherry or cerise-pink. One of the finest; fragrant.

Ne Plus Ultra. A vigorous strong growing variety. Color light violet, rose center, petals overlaid with salmon pink.

Officinalis Rubra. Fragrant, large size, double crimson. This is the old-fashioned early double red peony.

Officinalis tenuifolia fl. pl. (Fringe Leaf). Early; dark red; the foliage is delicate and fern-like.

Prince Imperial. Brilliant purplish scarlet, free bloomer. Fine for massing in landscape work.

Reine de Fleurs. Fine, rosy pink, salmon center.

Rubra superba (Richardson's). Dark crimson, large and full. Very late and one of the best of the dark reds.



Edulis Superba.

Festiva Maxima.

Felix Crousse.

Hardy Phlox

We know of nothing more desirable among the hardy plants than Perennial Phlox. They may be used in hardy borders, groups on the lawn, or planted in front of shrubbery, where they furnish an abundance of flowers for a long time. Our collection is made up of the most distinct and striking colors and contains the best new sorts, as well as the cream of the old varieties.

The blooming season, which in established plants is during July and August, may be prolonged by pinching back some of the plants in June. They may be planted in either fall or spring. Are perfectly hardy. Plants should be taken up and transplanted every three or four years.

Coquelicot. Fine; pure scarlet-crimson center. One of the very best.

Eiffel Tower. Tall grower; fine pink.

Elizabeth Campbell. Large spikes, light salmon pink shading to dark pink in center.

Eclaireur. Purplish crimson, with lighter center. An early and continuous bloomer; flower large.

Fernand Cortez. Deep crimson. One of the best.

G. A. Strohlein. Orange scarlet.

Luster. Large, rose pink, darker center. Fine.

M. P. Langier. Bright red, with vermillion center.

Miss Lingard. Almost pure white, slightest pink eye; large spikes; fine quality; very early.

Mrs. Jenkins. A tall early white.

Premier Minister. Rosy white, deep rose center.

Pantheon. Fine dark pink.

Queen. Large, pure white.

Richard Wallace. White, rosy center.

R. P. Struthers. Clear cherry red with a deep red eye.

Von Lassburg. Pure white, very large.

Wm. Robinson.
Salmon with rosy center.



Dahlias. (See page 44.)

Phlox Subulata

Creeping plants with handsome, moss-like, evergreen foliage, completely covered with flowers in the early spring.

Subulata alba. Pure white flowers.

Subulata rosea. Clear rose color.



Dahlias

Soil and Care. Any good, rich garden soil, not too wet, is all right. If not rich, fertilize freely, set 3 feet apart, and for best results allow but one stalk in a hill; keep well cultivated. In dry weather Dahlias are greatly benefited by a heavy mulching of leaf rot or short manure. After frost has destroyed the bloom, cut the stem off about three inches from the ground, and with a spade lift them from the bed. Expose to sun until they are well dried, then store the bulbs in a dry room or cellar, where they will not be reached by frost.

The following varieties are the cream of a long list, and are sure to give satisfaction.

Show Dahlias

These include all the large, close-flowering varieties of a single color and those of which the ground color is lighter than edges or tips.

A. D. Livoni. A beautiful shell-pink with quilled petals, full to center; profuse bloomer.

Bon Ton. A fine ball-shaped flower of deep garnet red. Very good.

Cuban Giant. Very large, ball-shaped, color bright maroon, early and a free bloomer.

Dreer's White. Very large, full, and a free bloomer; by far the best white of its class.

Yellow Duke. Large, pure yellow.

Cactus Dahlias

Are characterized by long, pointed, revolute petals. They are very graceful, without the stiff formality of the show class.

Countess of Lonsdale. Color salmon pink and amber, nicely blended.

Chas. Clayton. Blossoms large, bright dazzling red on strong stems well above the foliage, free bloomer.

Floradora. Free flowering, good shape, color blood red.

Goldland. Early and free bloomer, good for cutting. One of the very best yellows.

Gen. Buller. Light maroon, long, narrow, twisted petals; each one tipped with white.

Keynes White. A fine white of perfect shape.

Kriemhilde. One of the very best in cultivation. The outer petals are a delicate shell-pink, shading to white in the center; a good grower and free bloomer.

Rhein Koenig. Said to be the ideal white Cactus, A healthy grower, large, pure white flowers on tall, stiff stems, fine for cutting.

Decorative Dahlias

These have broader and heavier petals than the true cactus. As a class the flowers are larger and more striking, the plant is also of stronger growth; are fine for bouquets and cut-flower decorations; also magnificent in the garden.

Clifford W. Bruton. Large, clear yellow, very fine.

Delice. The beautiful rose pink, perfect shaped flowers are borne on stout, stiff stems that hold them well above the foliage. Very desirable as a cut flower.

Henry Patrick. Large, pure white; strong grower and free bloomer; fine for cut flowers, as stems are long.

Manzanola. Intense, vivid red. Flowers are large and finely formed showing well above the foliage.

Mrs. Roosevelt. Very large silvery rose, perfectly double.

Perle de Lyon. Pure white, perfectly formed, very free flowering; one of the best.

Souvenir de Gustav Doazon. Very large, often measuring 6 to 8 inches in diameter; a profuse bloomer; a good red.

Sylvia. White center, shading to pink on the outside petals; large and fine.

Fancy Dahlias

These include all striped, large-flowering varieties and those in which the ground color is darker than the edge or tips. They are, as a rule, very valuable. Often, however, they show but a single color.

Amazon. Yellow, edged red.

Frank Smith. Rich dark maroon tipped with pinkish white. Most perfect of the fancy class.

Lottie Eckford. White, striped and spotted pink and crimson.

Startler. Dark purple-maroon, tipped white.

Uncertainty. Varies from white, marbled blue and carmine to solid crimson-maroon on same plant; a fine sort.

Pompon Dahlias

The plants of this class are rather dwarf stocky growers. Flowers are very double, and as a class, are free bloomers.

Bacchus. Clear, bright red.

Catherine. Bright, pure yellow.

Little Bell. A clear, rosy pink.

Purity. Pure white. A very free bloomer.

Single Dahlias

Twentieth Century. Early in the season an intense rosy crimson shading gradually to almost white on the edges and a white halo around the disc. As the season advances, the flowers become lighter, changing to almost pure white suffused with soft pink.

White Century. Pure white with large heavy overlapping petals of good texture.

Collarette Dahlias

An entirely distinct type having a row of short petals around the disc which form a frill or collar and which are of an entirely different color from the rest of the flower.

President Vigor. Rich claret shading lighter towards the edges while the frill or collar is pure white.

Peony Flowered Dahlias

This beautiful type has become very popular. The large, loose, semi-double flowers are usually produced on long stems, making them very desirable as cut flowers as well as for garden.

There is considerable variation in the different varieties of this class. Some have long curved or twisted petals, others are of the broad, flat type. We are listing a few of the standard sorts.

Duke Henry. Large, broad petals, brilliant red, free bloomer.

Freida Newman. Long stem, excellent for cutting. Color, bright orange bronze, margined with old gold.

La Jara. Pure lemon color; a free bloomer.

Ournay. Deep blood red. Flowers large and rather loose.

Phenomine. Rich creamy pink, fine form.

Queen Wilhelmina. Large, fluffy flowers of pure white with yellow center.

Gladioli

There is nothing in the summer-flowering bulbs that is more attractive or satisfactory than the Gladioli. They will thrive in any good garden soil, but amply repay extra care and feeding by larger size and greater beauty of individual flower. Our list in both the named varieties and mixture includes the most desirable sorts. Bulbs should be planted 4 inches apart and from 3 to 4 inches deep.

What we have said of the Dahlia applies to the Gladioli as well. The new varieties being brought out are legion. There is nothing for a cut flower that can take their place. If cut when the lower blooms begin to open and kept in water, they will last from a week to ten days.

Named Sorts

The following are selected from a long list and are all fine sorts:

America. Soft, flesh pink, strong, healthy grower, individual flowers large. One of the best.

Baron Hulot. A rich, deep, violet blue.

Canary Bird. Clear canary yellow.

Chicago White. Pure white with faint lavender streak in lower petal. One of the earliest to bloom.

Glory. Delicate cream pink, crimson stripe in lower petal.

Mrs. Frank Pendleton. Salmon pink, blotched maroon.

Mrs. Francis King. Light scarlet or flame color; very effective.

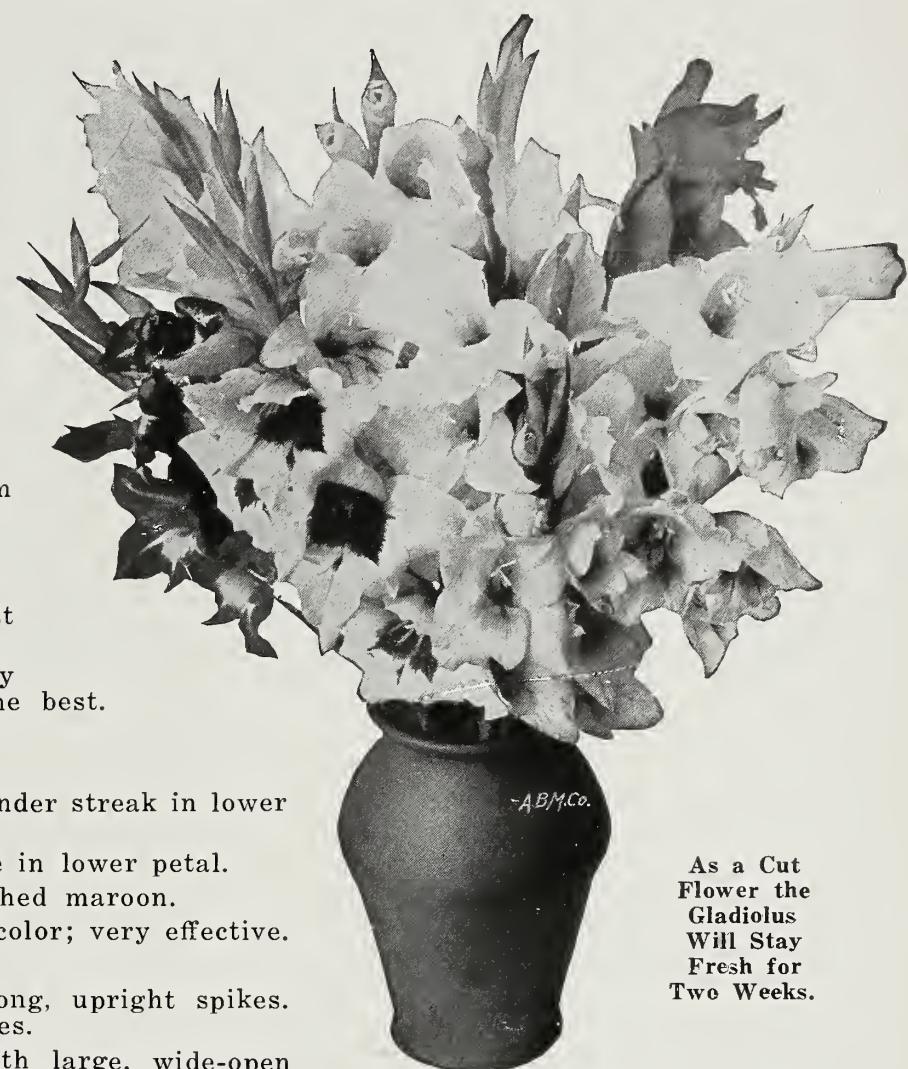
Panama. One of the very best pinks.

Peace. Flowers very large, borne on strong, upright spikes. Almost pure white. Fine for cutting purposes.

Princeps. A strong, vigorous grower, with large, wide-open flowers, ranging from 5 to 6 inches in diameter, of a rich dazzling scarlet, marked with white on the lower petals. A splendid sort.

Schwaben. Yellow, very large flowers.

War. Deep blood red, shaded crimson black.



As a Cut
Flower the
Gladiolus
Will Stay
Fresh for
Two Weeks.

Mixed Gladiolus

We make up mixtures to suit the needs and tastes of our customers. One can have them in either the light or dark colors or both. There are no inferior sorts that go into these mixtures. We have two mixtures as shown in price list. The XX is made up of the newer introductions. The regular mixed are made up of the older sorts. Where one does not care especially for named sorts, these mixtures will give excellent satisfaction.

Hardy Lilies

These are especially valuable planted among shrubbery, in borders or in clumps. The following are all hardy and will improve from year to year without transplanting. We would advise planting as early in October as good, well-ripened bulbs can be obtained.

L. Canadense (Meadow Lily). 2 to 5 feet. The flowers are bell-shaped, yellow and red, and borne on graceful drooping stems in July. A good native sort.

L. candidum. 3 to 4 feet. Probably the hardest white lily; flowers pure white. Also used for forcing. Should be planted in September.

L. superbum (Turk's Cap Lily). 4 to 6 feet. The best of the native sorts. A single stalk often produces from twenty-five to forty flowers. When planted in groups no description can do them justice. As one writer describes them, they are literally a blaze of scarlet and gold.

L. tigrinum fl. pl. (Double Tiger Lily). 4 to 5 feet. Similar to the above, excepting that the flowers are double.

L. umbellatum. Blooms from the middle to the last of June; colors range from deep red through all shades of crimson, rose, yellow, buff, etc.



Lilium Candidum—Madonna Lily.



Bed of Cannas.

Cannas

The Canna provides the nearest approach to the rich tropical effects that the north can supply. They grow rapidly and bloom for a long season, succeeding in sunny positions in almost any kind of soil and responding quickly to liberal treatment by gorgeousness of bloom, size of foliage and height of stems.

The only drawback to the growing of Cannas is the difficulty of keeping them over winter. If allowed to get too dry they shrivel and die; if kept too wet they rot, but they make such a tropical effect planted in beds or in borders that it is well worth the little cost even if new plants had to be purchased every year. Give us the colors you want and whether tall or dwarf varieties and we

will make good selection. Round beds are very effective. It takes 19 plants for a bed 7 feet in diameter and 37 plants for a bed 10 feet in diameter. One plant in center and first row 18 inches from center plant and 18 inches apart in row takes 6 plants for first row and 12 plants for second row, making 19 plants for the 7-foot bed, and 18 plants for third row, making 37 plants for 10-foot bed.

Tuberose

The most fragrant and beautiful of summer flowers.

Excelsior, Double Pearl. Double, pure white.

Hardy Ornamental Grasses

When planted singly in beds, or in groups on the lawn, they give a very fine effect. Are being used largely in gardens and parks. They are not all perfectly hardy.

Eulalia

E. gracillima univittata. 4 to 5 feet. Very narrow foliage of bright green color, with white midrib. One of the best.

E. Japonica. Tall, showy; plain green leaves.

Var. variegata. Long narrow leaves, striped with green and white. Flower stalks 4 to 6 feet high. Very ornamental.

Var. zebrina. 5 to 7 feet. A very striking and distinct plant, striped with yellow bands, about 3 inches apart, across the stem and leaf, instead of lengthwise.

Erianthus

E. Ravennæ (Hardy Pampas Grass). Thrives best in a light, well-drained soil; grows from 7 to 8 feet high. Forms broad clumps, and throws up numerous stalks with beautiful long feathery plumes. Foliage dark bronze-green.

Phalaris

P. arundinacea variegata (Ribbon Grass). Large, variegated foliage; good for bouquets and for bordering large beds. Hardy.



Eulalia Japonica.

Control of Insects and Plant Diseases

A Spray Calendar

S. B. FRACKER, State Department of Agriculture, and
R. E. VAUGHAN, College of Agriculture

Spraying of fruit trees has become standardized and simplified within the last four or five years. It is now an easy matter for an amateur to get profitable results without elaborate preparation, if a good spray pump is available.

This has been accomplished by the development of a regular spray schedule to be applied every year, using materials which require no heating or other unwieldy process. The schedule for apples, plums, and cherries is outlined on page 48. Additional applications may be needed under unusual conditions. The following paragraphs describe the more common spray materials and their purpose.

Arsenate of Lead

This spray material is more widely used than all others for the control of chewing insects. In spraying orchards it is usually applied in combination with lime sulphur or Bordeaux Mixture.

Orchard Formula

Arsenate of lead (powdered)	1 to 1½ lbs.
Water	50 gal.
Soap	3 lbs.

Garden Formula

Arsenate of lead (powdered)	1 tablespoonful
Soapy water	1 quart

APHIDS

Nicotine Sulphate

Always use 40 per cent nicotine sulphate ("Black Leaf 40") against aphids or plant lice if it can be obtained.

Orchard Formula

Black Leaf 40	½ pint
Soap	2 lbs.
Water	50 gal.

Garden Formula

Black Leaf 40	1 teaspoonful
Water (preferably soapy)	1 gal.

Bordeaux Mixture

Is valuable for controlling many leaf diseases as apple scab and potato late blight. The active agent in Bordeaux is an insoluble salt of copper and lime which makes a film over the leaves. It is a preventive, not a cure.

To make a barrel of this mixture dissolve 4 pounds of copper sulphate suspended in a bag in a pail of water and dilute to 25 gallons; also slake 4 pounds of fresh stone lime and dilute to 25 gallons. Strain the lime and pour one solution into the other while they are being stirred. Do not try to combine concentrated solutions. Apply with a spray pump that will maintain a high pressure and throw a fine spray.

Cautions: Copper sulphate corrodes iron or steel and should be handled in wood or cement containers. Tinned or galvanized pails are safe if the coating is intact. Stir the mixture while it is being made and in the sprayer.

For the garden and backyard orchard the following formula is suggested:

Copper sulphate	2 oz.
Stone lime (limeate 2½ oz.)	2 oz.
Water (total)	5 qt.

Lime-sulphur has come to supersede Bordeaux in certain of the spray applications on fruit trees because of its recognized fungicidal properties, the fact that it does not cause so much russetting of the fruit, and is more easily made up. It is not applicable to the spraying of the vegetables. The summer strength of spray is secured by using 1¼ gallons of commercial 32° Baume lime-sulphur to 50 gallons. Determine the density by using a hydrometer. It refers to the proportion of sulphides in solution. If the reading varies from 23° to 33° an adjustment in the amount of water should be made in the same proportion. Dilution tables are furnished by the spray companies.

SCALE INSECTS

The most common scale insect in Wisconsin is the oyster shell scale which is often crowded thickly on the bark of apple trees. In recent years it has become decidedly injurious especially in the southern part of the state.

San Jose scale is present in only a few localities, mainly cities in the southeastern counties. Both species are controlled by the same materials but a greater strength is required for San Jose.

Use one gallon of the commercial concentrated lime-sulphur (testing 32° Baume) to 10 gallons of water when trees are dormant.

Combining Insecticides and Fungicides

Arsenate of lead and nicotine compounds may safely be combined with Bordeaux mixture or lime-sulphur solution, making it possible to control insect pests and fungous diseases with the same operation. This is especially important in relation to apple scab, codling moth, and apple worm injury. When combined with lime-sulphur there is a sludge formed in the tank which must be removed from time to time.

Dusting

Insecticides and fungicides are now often applied dry, in dust form, on account of the rapidity of operation. This is still in its experimental stage and its place in orchard practice is yet to be determined.

A common proportion is 10 per cent arsenate of lead, the balance fine dusting sulphur.

The above are extracts taken from Bulletin No. 36. We only wish it had been possible to include the entire bulletin as compiled by Dr. Fracker and Prof. Vaughan in our catalog. Lack of space prevents. If you are interested in Spraying it will pay you to send to The Wisconsin Department of Agriculture, Madison, Wisconsin, for Bulletin No. 36.

Orchard Spray Schedule

Plant	Disease	Insect	Spray	Time of Application				Remarks
				1st	2nd	3rd	4th	
APPLE Regular Annual Program	Scab	Coddling moth, curculio, and others.	Lime - sulphur 1 1/4 gal.; *and arsenate of lead powder 1 lb.; in 50 gal. water	Blossom buds showing pink, *but after clus- ter separates	Petals mostly fallen	10 days later	Between 5 and 14 usually	Plow under dead leaves
APPLE (Special sprays)	Scale insects (if Oyster shell or San Jose are present)		Lime-sulphur, 1 gal. to each 10 gal. water	Before growth starts				Do not use this spray unless needed — it is sometimes ef- fective against aphid eggs also.
CHERRY and PLUM Regular Annual Program	Aphids (plant lice)		Add 1/2 pint (3/4 pint for cherries) 40% nicotine sulphate to each 50 gal. in reg- ular spray program when necessary	As necessary				
	Slugs, curculio, etc. (For aphids, see apple)		Lime - sulphur 1 1/4 gal., and arsenate of lead powder 3/4 lb., to 50 gal. water	Just after the petals fall	10 days later	After cherry picking if necessary		Plow under dead leaves

*In spraying apples (badly scabbing varieties) greater protection against scab may be secured by including an additional early lime-sulphur spray (1 1/2 to 50) when the first three or four leaves have separated from the fruit buds and at about the time the leading bud shows the first trace of pink. This is known as the "pre-pink" spray. Additional information can be furnished if desired.

Note.—Bordeaux mixture may, if desired, be substituted for lime-sulphur in any apple scab spray. From one to eight gallons of diluted spray material will be used per tree, depending on the size.

Small Fruit Schedule

STRAWBERRY	Leaf-spot	Leafrollers and slugs	Arsenate of lead powder 1 1/2 lbs. in Bordeaux mixture 3-3-50	When leaves appear	After petals fall if neces- sary			Cut and burn 1 year old bed— plow under af- ter second year
CURRENT and GOOSEBERRY		Currant worms	Arsenate of lead powder, 1 1/2, to 50	When leaves are well open	As neces- sary			
RASPBERRY BLACKBERRY	Anthracnose	Aphids (plant lice)	40% nicotine sulphate, 1-800	As necessary				Two sprayings necessary if in- fection is heavy
			Lime-sulphur 1-10 or 1-40	As buds are swelling but before leaves ap- pear, lime-sul- phur 1-10	When fruit buds begin to form,			

Note.—In spraying for control of Anthracnose on raspberries the addition of gelatin, 1/2 lb. to 100 gal., has proven very beneficial. Unpublished data of L. K. Jones, Agricultural Experiment Station.

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